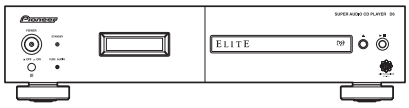
Pioneer sound.vision.soul

Service Manual



PD-D6-J

ORDER NO.
RRV3531

Super Audio CD Player

PD-D6-J
PD-D6-S

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	The voltage can be converted by the following method
PD-D6-J	KUXJ/CA	AC 120V	———
PD-D6-J	MYXJ5	AC 220 V to 230 V	———
PD-D6-S	RLFPWXJ	AC 110 V / 220 V to 240 V	with the voltage selector

For details, refer to "Important Check Points for Good Servicing".

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ⓒ**PIONEER CORPORATION 2006**

T-ZZV NOV. 2006 printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

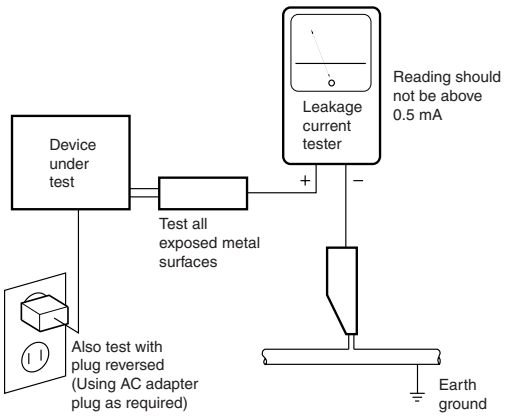
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.


Reading should not be above 0.5 mA
Leakage current tester
Device under test
+
–
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

LITHIUM BATTERY NOTICE

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

When replacing the lithium batteries, follow the note below. Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note : The lithium battery installation position is shown in the exploded views.

WARNING !

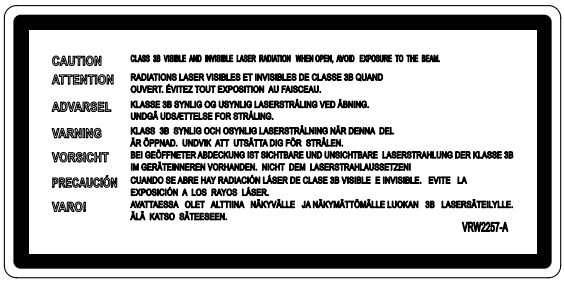
THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

LASER DIODE CHARACTERISTICS

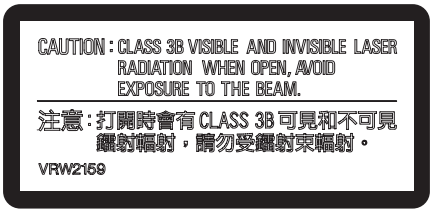
FOR CD : MAXIMUM OUTPUT POWER : 7 mW
WAVELENGTH : 780 nm
(FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm)

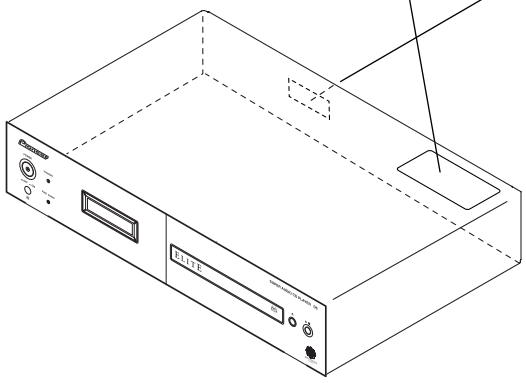
LABEL CHECK

KUXJ/CA, MYXJ5 types : VRW2257


CAUTION
CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM.
ATTENTION
RADIATIONS LASER VISIBLES ET INVISIBLES DE CLASSE 3B QUAND OUVERT. ÉVITEZ TOUT EXPOSITION AU FAISCEAU.
ADVARSEL
KLASSE 3B SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING
KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
VORSICHT
BEI GEÖFFNETER ABDECKUNG IST SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG DER KLASSE 3B IM GERÄTEINNEREN VORHANDEN. NICHT DEM LASERSTRAHLAUSSETZEN!
PRECAUCIÓN
CUANDO SE ABRE HAY RADIACIÓN LÁSER DE CLASE 3B VISIBLE E INVISIBLE. EVITE LA EXPOSICIÓN A LOS RAYOS LÁSER.
VARO!
AVATTAESSA OLET ALTTIINA NÄKYVÄLLE JA NÄKYMÄTTÖMÄLLE LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VRW2257-A

RLFPWXJ type : VRW2159


CAUTION : CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO THE BEAM.
注意 : 打開時會有 CLASS 3B 可見和不可見鐳射輻射，請勿受鐳射束輻射。
VRW2159



(Printed on the Rear Panel)

Additional Laser Caution

1. Laser Interlock Mechanism
   • Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.
   When this switch turned ON in SW2 (CLOSE) side (OPEN signal is 0V and CLOSE signal is 3.5V), a laser becomes the status which can completely oscillation.
   Furthermore, the laser completely oscillates in the disc judgment and disc playback.
   When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
   • Laser diode is driving with Q307 (650nm LD) and Q308 (780nm LD) on the DVDM Assy.
   Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
   • In the test mode ∗ , there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
   The interlock mechanism mentioned above becomes invalid in this mode.

2. When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

∗ : Refer to page 58.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SPECIFICATIONS

- **General**

System. . . . . Super Audio CD player
Power requirements(KUXJ/CA) . .AC 120 V, 60 Hz
Power requirements(MYXJ5)
. . . . . .AC 220 V to 230V, 50 / 60 Hz
Power requirements(RLFPWXJ)
. . . AC 110 V, 60 Hz, 220 V to 240V, 50 / 60 Hz
Power consumption. . . . . .22 W
Power consumption (standby) . . . . . 0.4 W
Weight . . . . . 4.5 kg (9 lb. 15 oz.)
Dimensions
. . . . . 420 mm (W) x 100 mm (H) x 340 mm (D)
(16 9/16 in. (W) x 3 15/16 in. (H) x 13 3/8 in. (D)
Operating temperature . . . . . +5 ˚C to +35 ˚C
Operating humidity . . . . . .5 % to 85 %
(no condensation)

- **Audio output (1 stereo pair)**

Output level. . . . . During audio output
200 mVrms (1 kHz, -20 dB)
Number of channels 2
Jacks . . . . . RCA

- **Digital audio characteristics**

Frequency response . . . 4 Hz to 50 kHz (SACD)
4 Hz to 20 kHz (CD)
S/N ratio:
CD . . . . . 118 dB
SACD. . . . . 110 dB
Dynamic range:
CD . . . . . 99 dB
SACD. . . . . 108 dB
Total harmonic distortion:
CD . . . . . 0.002 %
SACD. . . . . 0.003 %
Wow and flutter . . . . . Limit of measurement
(±0.001 % W. PEAK) or lower

- **Digital output**

Coaxial digital output. . . . . .RCA jack
Optical digital output. . . . . Optical digital jack

- **Accessories**

Remote control 1
Lithium battery (CR2025) 1
RCA/phono stereo audio cable 1
SR control cable 1
Power cable 1
Operating Instructions
Warranty card

The specifications and design of this product are subject to change without notice, due to improvement.

Disc / content format playback compatibility

This player is compatible with a wide range of audio disc types and media formats. Playable discs will generally feature one of the following logos on the disc and/or disc packaging. Note however that some disc types, such as recordable CDs, may be in an unplayable formatósee the Disc compatibility table below for further compatibility information.

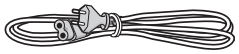
Please also note that recordable discs cannot be recorded using this player.

COMPACT disc DIGITAL AUDIO
COMPACT disc DIGITAL AUDIO Recordable
COMPACT disc DIGITAL AUDIO ReWritable
SUPER AUDIO CD

Audio CD CD-R CD-RW Super Audio CD

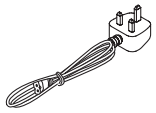
● Accessories

• Power cable
(ADG7062 : MYXJ5)

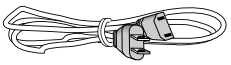


(ADG7061 : KUXJ/CA)

(ADG7104 : RLFPWXJ)



(ADG7076 : RLFPWXJ)



• RCA/phono stereo audio cable
(XDE3047)

• Remote Control
(PWW1175 : Except RLFPWXJ)
(PWW1176 : RLFPWXJ type)

• SR control cable
(XDE3063)

• Lithium Battery (CR2025)

(Attached inside the remote control)

A

B

C

D

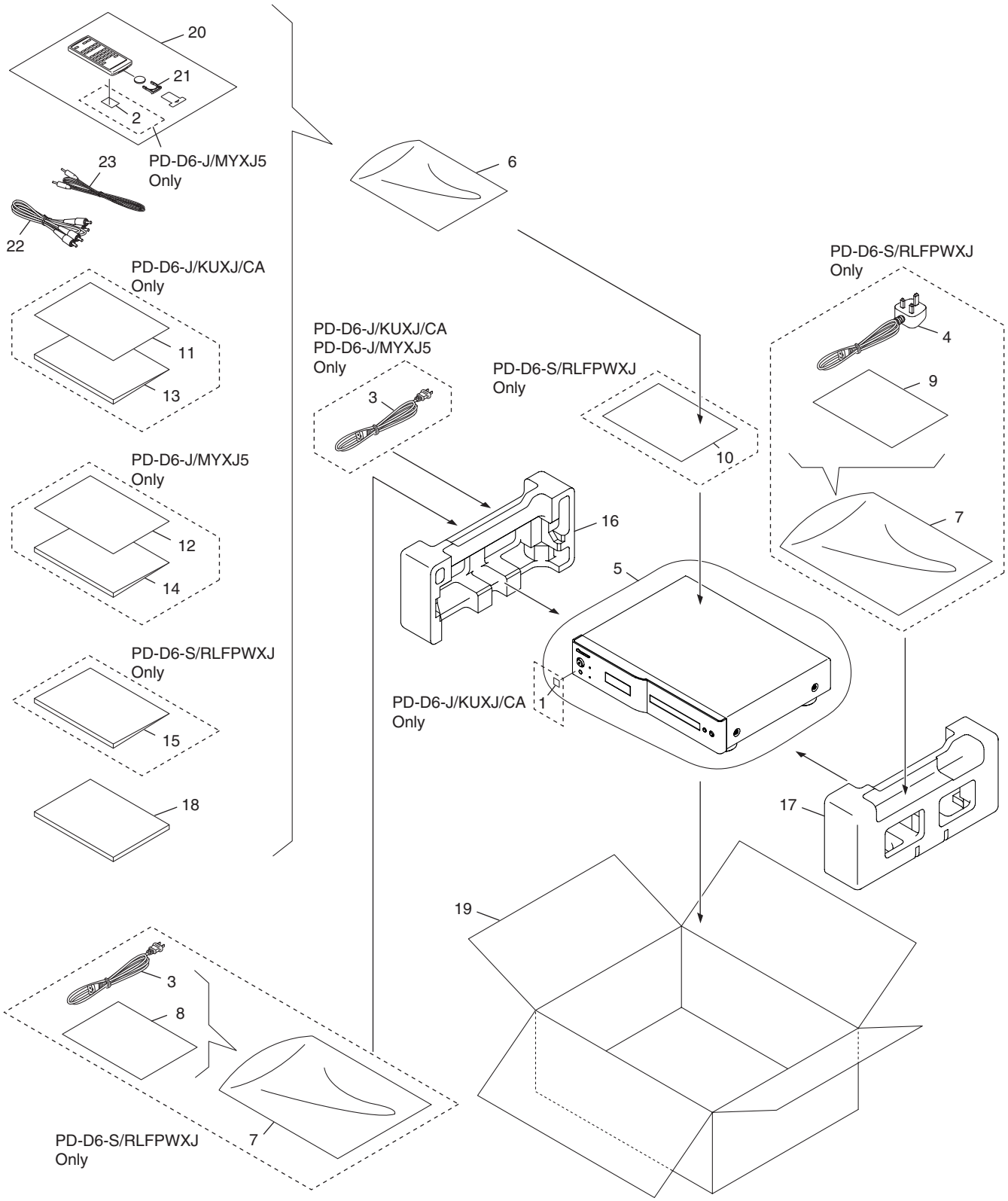
E

F

2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING



(1) PACKING SECTION PARTS LIST

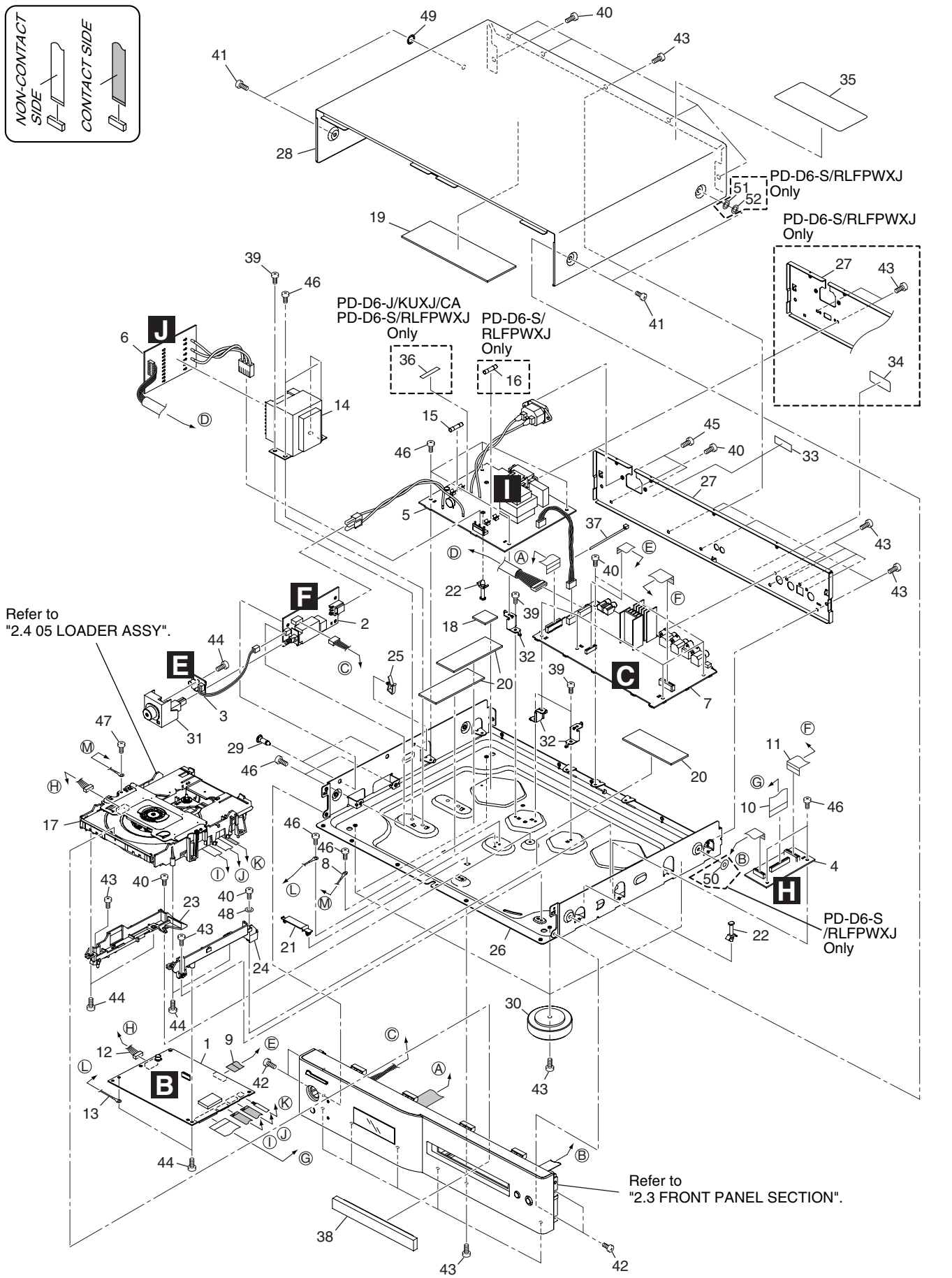
Mark	No.	Description	Part No.
NSP	1	Energy Star Label	See Contrast table (2)
	2	Label (WEEE)	See Contrast table (2)
⚠	3	AC Power Cord	See Contrast table (2)
⚠	4	AC Power Cord	See Contrast table (2)
	5	Packing Sheet	AHG7010
NSP	6	Polyethylene Bag	AHG7117
NSP	7	Literature Bag	See Contrast table (2)
	8	Caution Card (SD SB)	See Contrast table (2)
	9	Caution Card (SB)	See Contrast table (2)
	10	Caution Card 220-240	See Contrast table (2)
NSP	11	Warranty Card (EL)	See Contrast table (2)
NSP	12	Warranty Card	See Contrast table (2)
	13	Operating Instructions (English)	See Contrast table (2)
	14	Operating Instructions (English, French, German, Italian, Dutch, Spanish)	See Contrast table (2)
	15	Operating Instructions (English, Chinese)	See Contrast table (2)
	16	PAD L	PHA1353
	17	PAD R	PHA1354
NSP	18	Spacer	PHC1097
	19	Packing Case	See Contrast table (2)
	20	Remote Control Unit	See Contrast table (2)
	21	Battery Cover	See Contrast table (2)
	22	RCA/phono stereo audio cable	XDE3047
	23	SR control cable	XDE3063

(2) CONTRAST TABLE

PD-D6-J/KUXJ/CA, PD-D6-J/MYXJ5 and PD-D6-S/RLFPWXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	PD-D6-J/ KUXJ/CA	PD-D6-J/ MYXJ5	PD-D6-S/ RLFPWXJ
NSP	1	Energy Star Label	AAX8022	Not used	Not used
	2	Label (WEEE)	Not used	ARW7322	Not used
⚠	3	AC Power Cord	ADG7061	ADG7062	ADG7076
⚠	4	AC Power Cord	Not used	Not used	ADG7104
NSP	7	Literature Bag	Not used	Not used	AHG1180
	8	Caution Card (SD SB)	Not used	Not used	ARM7063
	9	Caution Card (SB)	Not used	Not used	ARM7064
	10	Caution Card 220-240	Not used	Not used	PRM1078
NSP	11	Warranty Card (EL)	ARY7007	Not used	Not used
NSP	12	Warranty Card (EU)	Not used	ARY7065	Not used
	13	Operating Instructions (English)	PRB1315	Not used	Not used
	14	Operating Instructions (English, French, German, Italian, Dutch, Spanish)	Not used	PRD1071	Not used
	15	Operating Instructions (English, Chinese)	Not used	Not used	PRD1072
	19	Packing Case	PHG2452	PHG2451	PHG2454
	20	Remote Control Unit	PWW1175	PWW1175	PWW1176
	21	Battery Cover	AZN8024	AZN8024	AZN8025

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	DVDM ASSY	AWM8069
	2	MNSW ASSY	AWX8794
	3	PLED ASSY	AWX8795
	4	CONNECTOR ASSY	AWX8796
	5	PRIMARY ASSY	See Contrast table (2)
	6	TRANS ASSY	See Contrast table (2)
	7	AJKB ASSY	AWM8075
NSP	8	Cord With Plug	ADH7022
	9	17P FFC	PDD1230
	10	29P FFC	PDD1231
	11	15P FFC	PDD1232
	12	Connector ASSY	PG05KK-E07
NSP	13	Cord With Plug	DE005VF0
⚠	14	Power Transfomer	See Contrast table (2)
⚠	15	Fuse 1	See Contrast table (2)
⚠	16	Fuse 2	See Contrast table (2)
NSP	17	05 LOADER ASSY	VWT1230
	18	Shield Cusion	AEB7372
	19	SR Sheet L	PEB1319
	20	SR Sheet S	PEB1320
NSP	21	Flatcable Clamp	AEC7376
	22	PCB Spacer KGPS-12S	AEC7517
	23	Adapter05 L	ANW7282
	24	Adapter05 R	ANW7283
	25	Side Clamp	DEC2007
NSP	26	Chassis	PNA2602

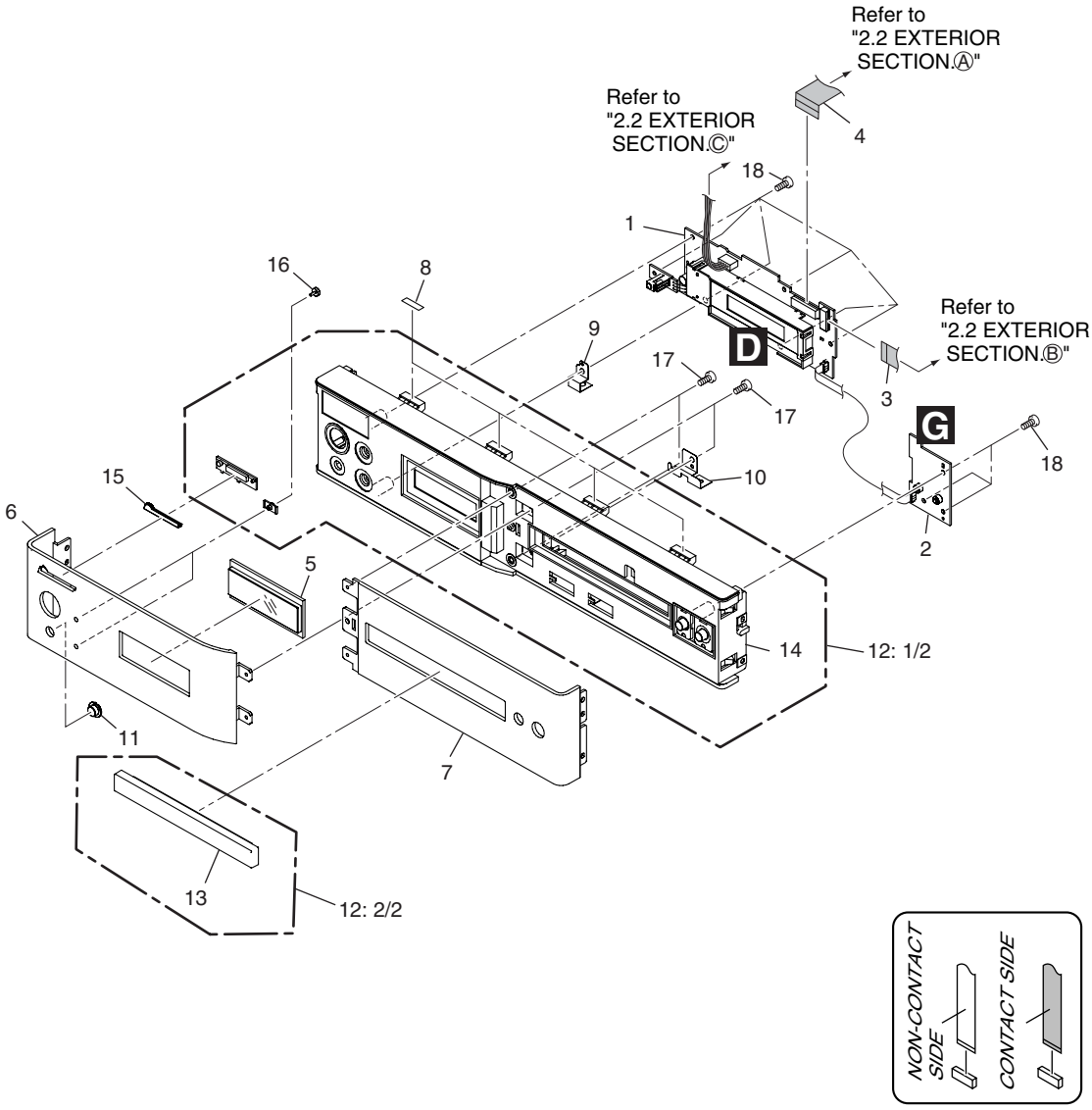
Mark	No.	Description	Part No.
	27	Rear Panel	See Contrast table (2)
	28	Bonnet	See Contrast table (2)
	29	PCB Holder	PNW2029
	30	Insulater	See Contrast table (2)
	31	Power Button ASSY	See Contrast table (2)
NSP	32	PCB Angle 989	VNE2409
NSP	33	Label	VRW1629
NSP	34	SISIR Label	See Contrast table (2)
	35	Caution Label	See Contrast table (2)
	36	Fuse Label	See Contrast table (2)
NSP	37	Binder	ZCA-BK1
	38	Tray Panel	See Contrast table (2)
	39	Screw	ABA1192
	40	Screw	ABA7017
	41	Deco. Screw 4X10	See Contrast table (2)
	42	Screw	BBT30P080FNI
	43	Screw	BBZ30P080FCC
	44	Screw	BPZ30P080FTC
	45	Screw	CBZ30P080FCC
	46	Screw	IBZ30P060FCC
	47	Screw	VBA1094
	48	Washer	PEC1046
	49	Washer	WG40FCC
	50	Spacer	See Contrast table (2)
	51	Washer	See Contrast table (2)
	52	Washer	See Contrast table (2)

(2) CONTRAST TABLE

PD-D6-J/KUXJ/CA, PD-D6-J/MYXJ5 and PD-D6-S/RLFPWXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	PD-D6-J/ KUXJ/CA	PD-D6-J/ MYXJ5	PD-D6-S/ RLFPWXJ
	5	PRIMARY ASSY	AWX8800	AWX8799	AWX8801
	6	TRANS ASSY	AWX8802	AWX8802	AWX8797
⚠	14	Power Transfomer	PTT1369	PTT1368	PTT1370
⚠	15	Fuse 1	REK1058 (1.25 A/ 250 V)	REK1134 (T500 mA/ 250 V)	REK1023 (T1.25 A / 250 V)
⚠	16	Fuse 2 (T500 mA / 250 V)	Not used	Not used	REK1134
	27	Rear Panel	PNA2606	PNA2605	PNA2607
	28	Bonnet	PNA2610	PNA2610	PNA2603
	30	Insulater	PNW2766	AMR7198	PNW2766
	31	Power Button ASSY	PXA1644	PXA1644	VXA2724
NSP	34	SISIR Label	Not used	Not used	PRW1601
	35	Caution Label	VRW2257	VRW2257	VRW2159
	36	Fuse Label	XAX3161	Not used	XAX3161
NSP	38	Tray Panel	PNW3048	PNW3051	PNW3044
	41	Deco. Screw 4X10	ABA7136	ABA7136	ABA7135
	50	Spacer	Not used	Not used	PEC1049
	51	Washer	Not used	Not used	PEC1048
	52	Washer	Not used	Not used	WB40FTC

2.3 FRONT PANEL SECTION



(1) FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	LCD ASSY	AWX8790
	2	KEY ASSY	AWX8792
	3	15P FFC	PDD1229
	4	17P FFC	PDD1233
	5	D.Window	PAM1866
NSP	6	AL Panel L	See Contrast table (2)
NSP	7	AL Panel R	See Contrast table (2)
	8	Himelon Sheet	PEB1321
	9	Earth Plate	PNB1662
	10	Earth Plate C	PNB1664
	11	Lens	See Contrast table (2)
NSP	12	Panel ASSY	See Contrast table (2)
	13	Tray Panel	See Contrast table (2)
	14	Panel Stay	See Contrast table (2)
	15	Pioneer Badge	VAM1124
NSP	16	LED Lens	VNK5073
	17	Screw	BBZ30P080FCC
	18	Screw	BPZ30P080FTC

(2) CONTRAST TABLE

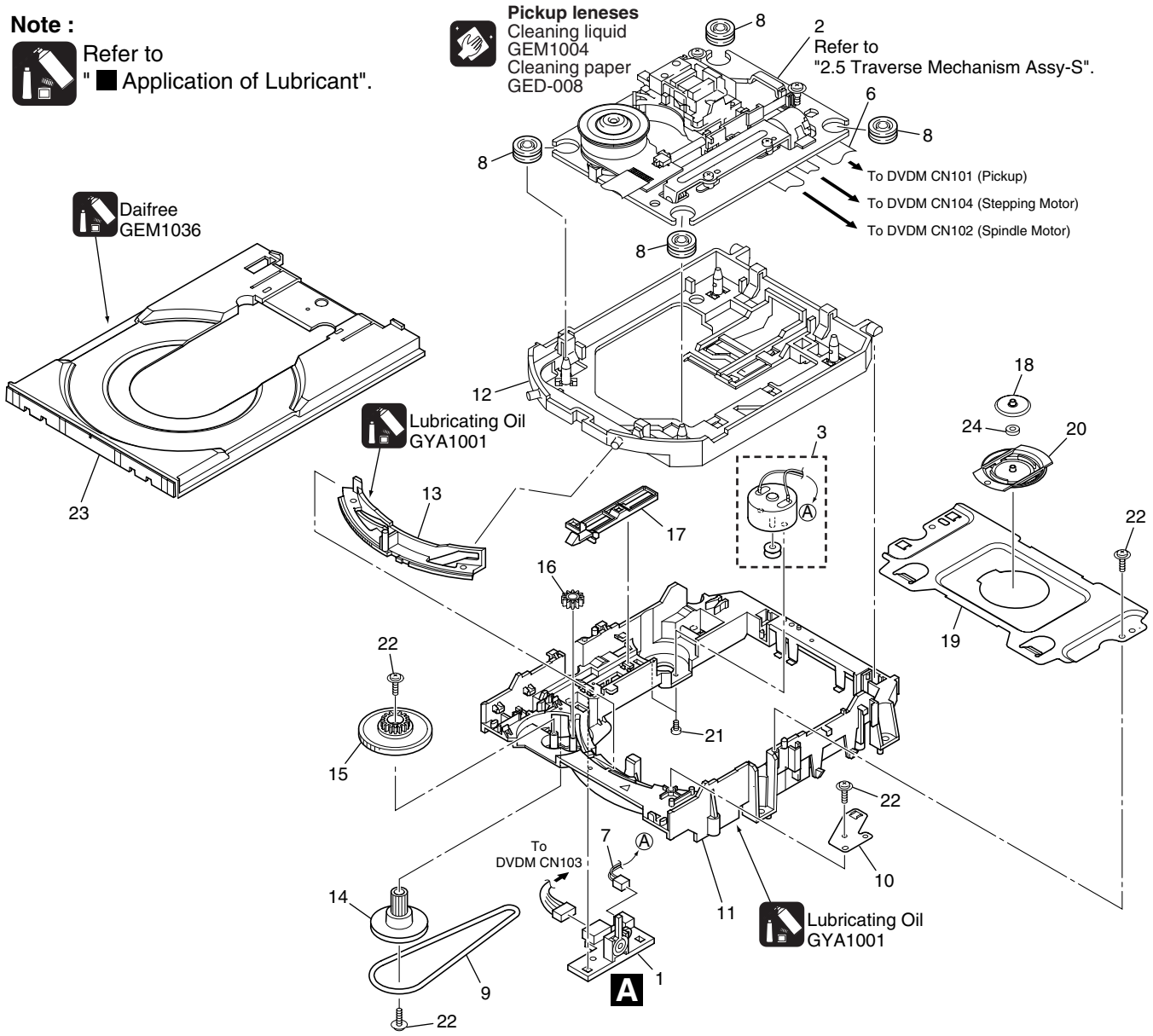
PD-D6-J/KUXJ/CA, PD-D6-J/MYXJ5 and PD-D6-S/RLFPWXJ are constructed the same except for the following :

Mark	No.	Symbol and Description	PD-D6-J/ KUXJ/CA	PD-D6-J/ MYXJ5	PD-D6-S/ RLFPWXJ
NSP	6	AL Panel L	PAN1389	PAN1389	PAN1385
NSP	7	AL Panel R	PAN1390	PAN1391	PAN1386
	11	Lens	PNW3047	PNW3047	AAK7586
NSP	12	Panel ASSY	PXA1645	PXA1646	PXA1647
	13	Tray Panel	PNW3048	PNW3051	PNW3044
	14	Panel Stay	PNW3049	PNW3049	PNW3043

2.4 05 LOADER ASSY

Note :

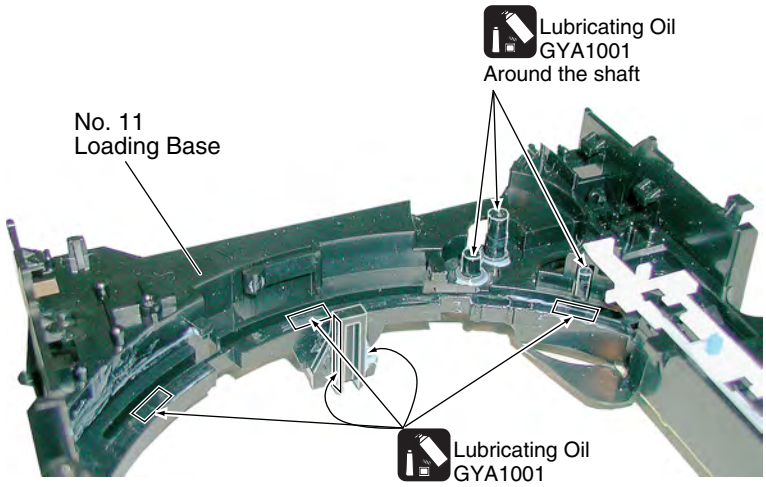
Refer to
" ■ Application of Lubricant".

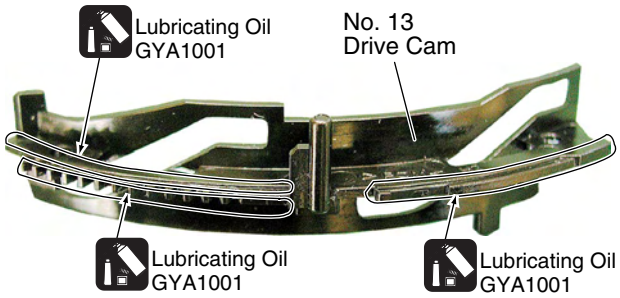


05 LOADER ASSY PARTS LIST

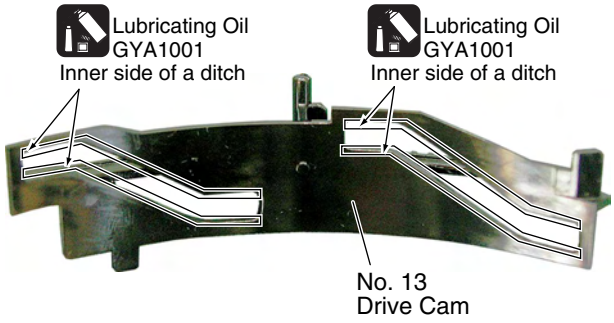
Mark	No.	Description	Part No.
NSP	1	LOAB Assy	VWG2346
	2	Traverse Mechanism Assy-S	DXX2581
	3	Loading Motor Assy	VXX2912
	4	• • • • •	
	5	• • • • •	
	6	Flexible Cable (24P)	ADD7546
	7	Connector Assy 2P	VKP2253
	8	Floating Rubber	VEB1351
	9	Belt	VEB1358
	10	Stabilizer	VNE2253
	11	Loading Base	VNL1917
	12	Float Base 04	VNL1968
	13	Drive Cam	VNL1919
	14	Gear Pulley	VNL1921
	15	Loading Gear	VNL1922
	16	Drive Gear	VNL1923
	17	SW Lever	VNL1925
	18	Clamper Plate 04	VNE2342
	19	Bridge 04	VNE2343
	20	Clamper 04	VNL1969
	21	Screw	JGZ17P028FTC
	22	Screw	VBA1094
	23	Tray	VNL1920
	24	Clamp Magnet	VMG1029

Application of Lubricant

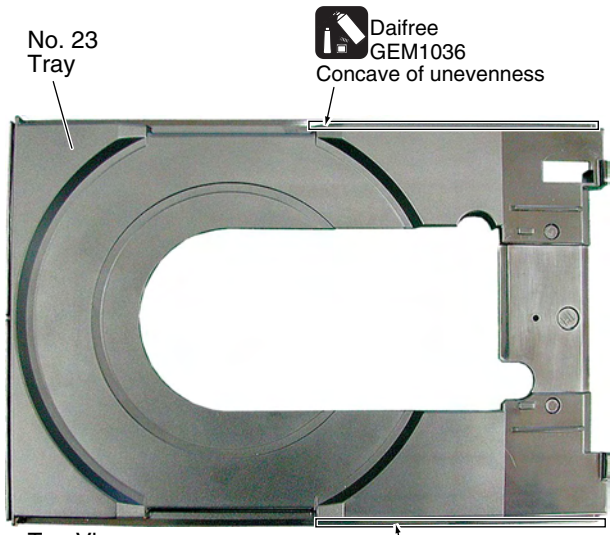




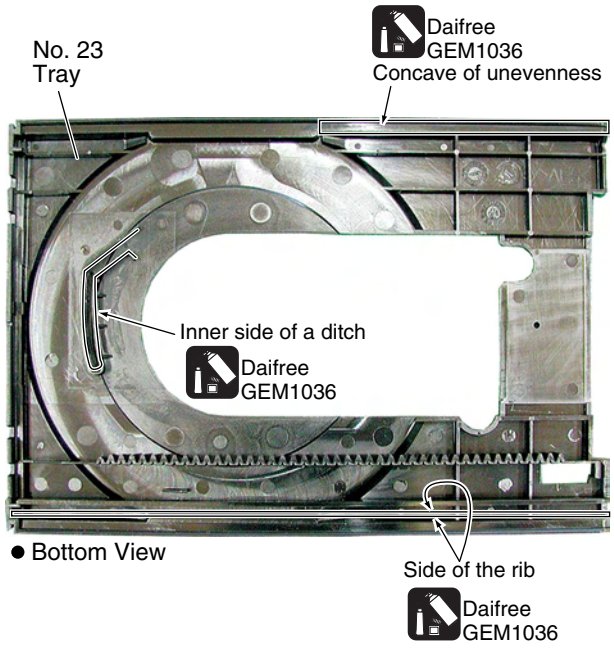
● Front View



● Rear View



● Top View

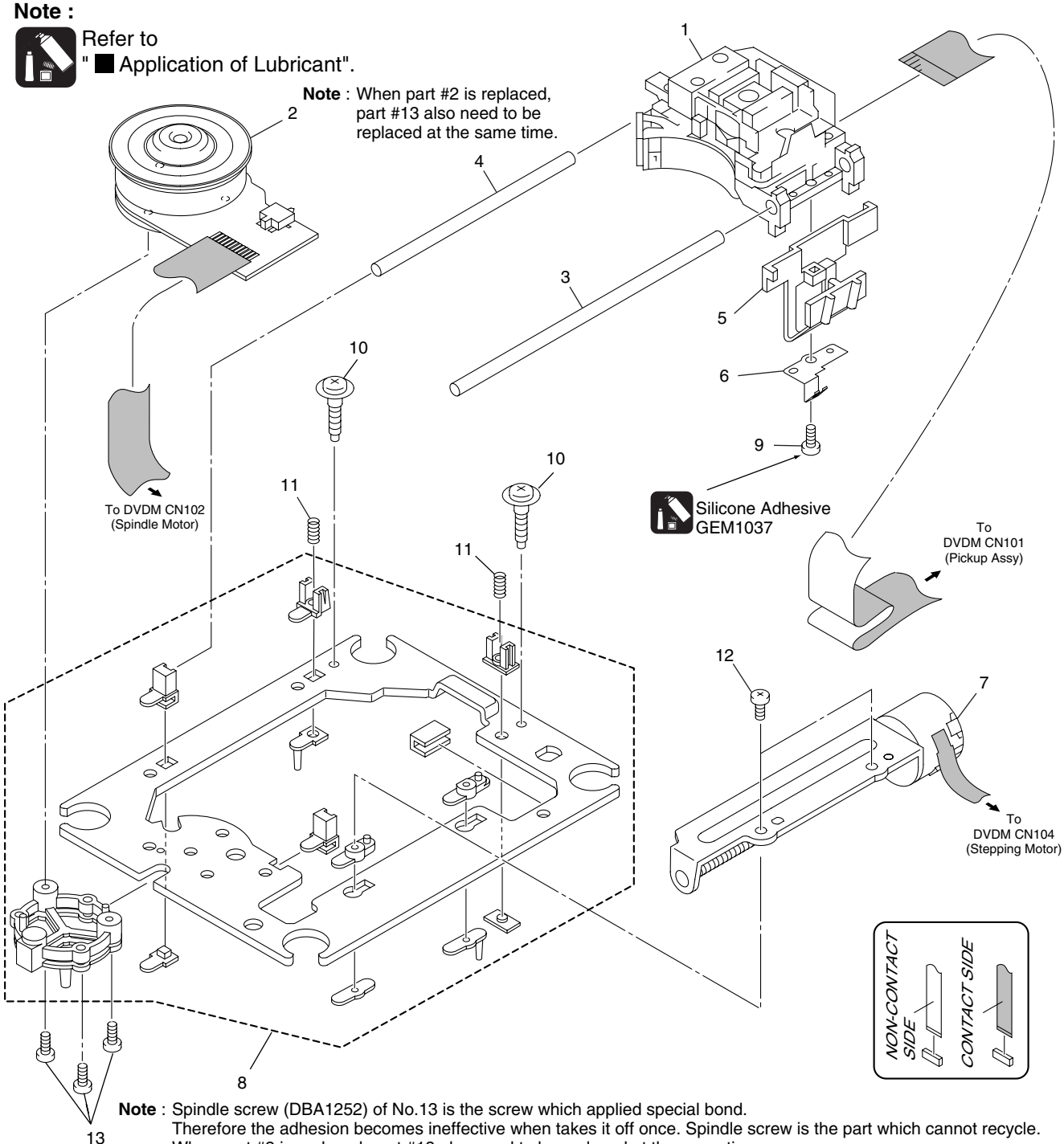


● Bottom View

2.5 TRAVERSE MECHANISM ASSY-S

Note :

Refer to
" ■ Application of Lubricant".



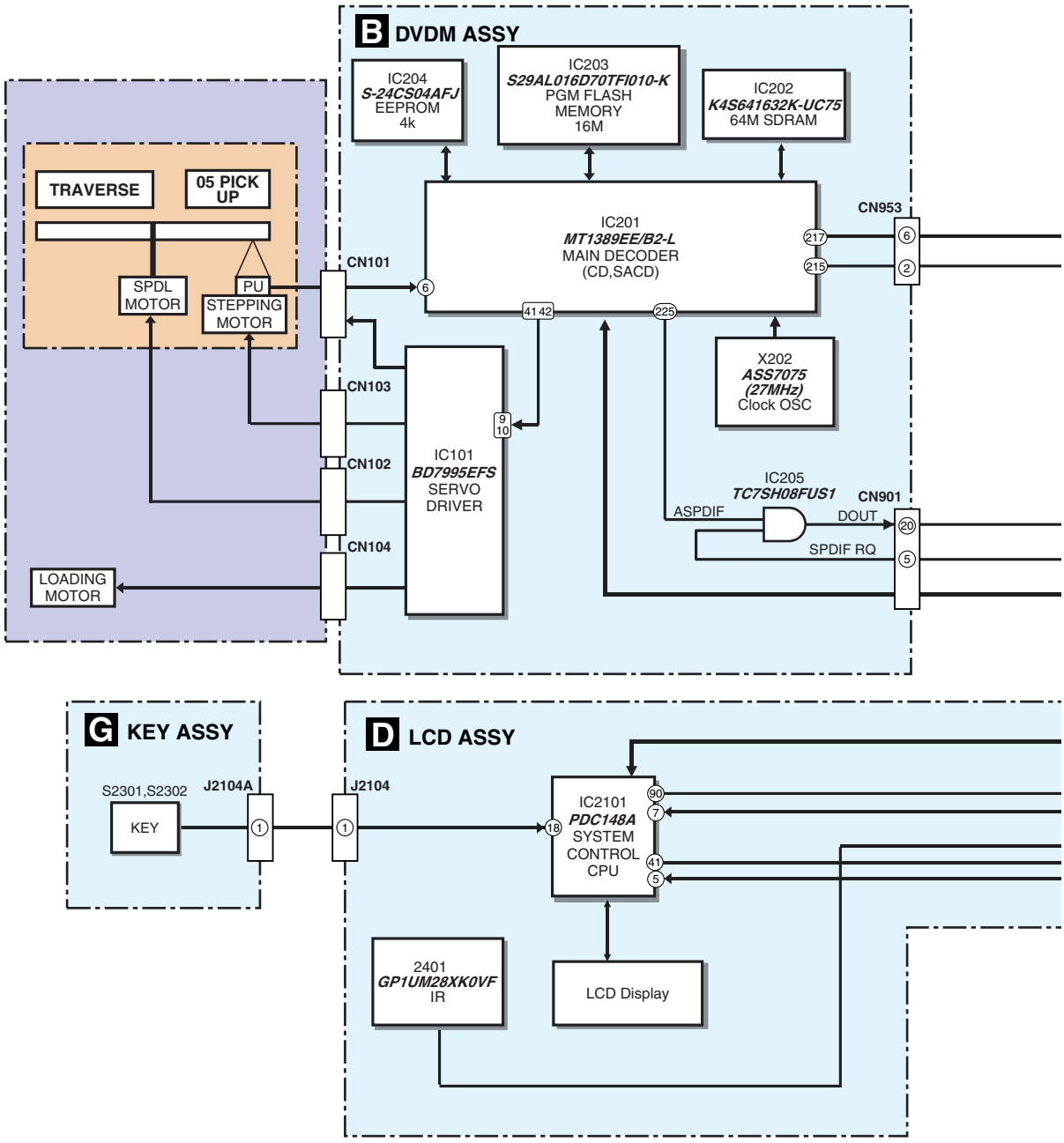
Note : Spindle screw (DBA1252) of No.13 is the screw which applied special bond.
Therefore the adhesion becomes ineffective when takes it off once. Spindle screw is the part which cannot recycle.
When part #2 is replaced, part #13 also need to be replaced at the same time.

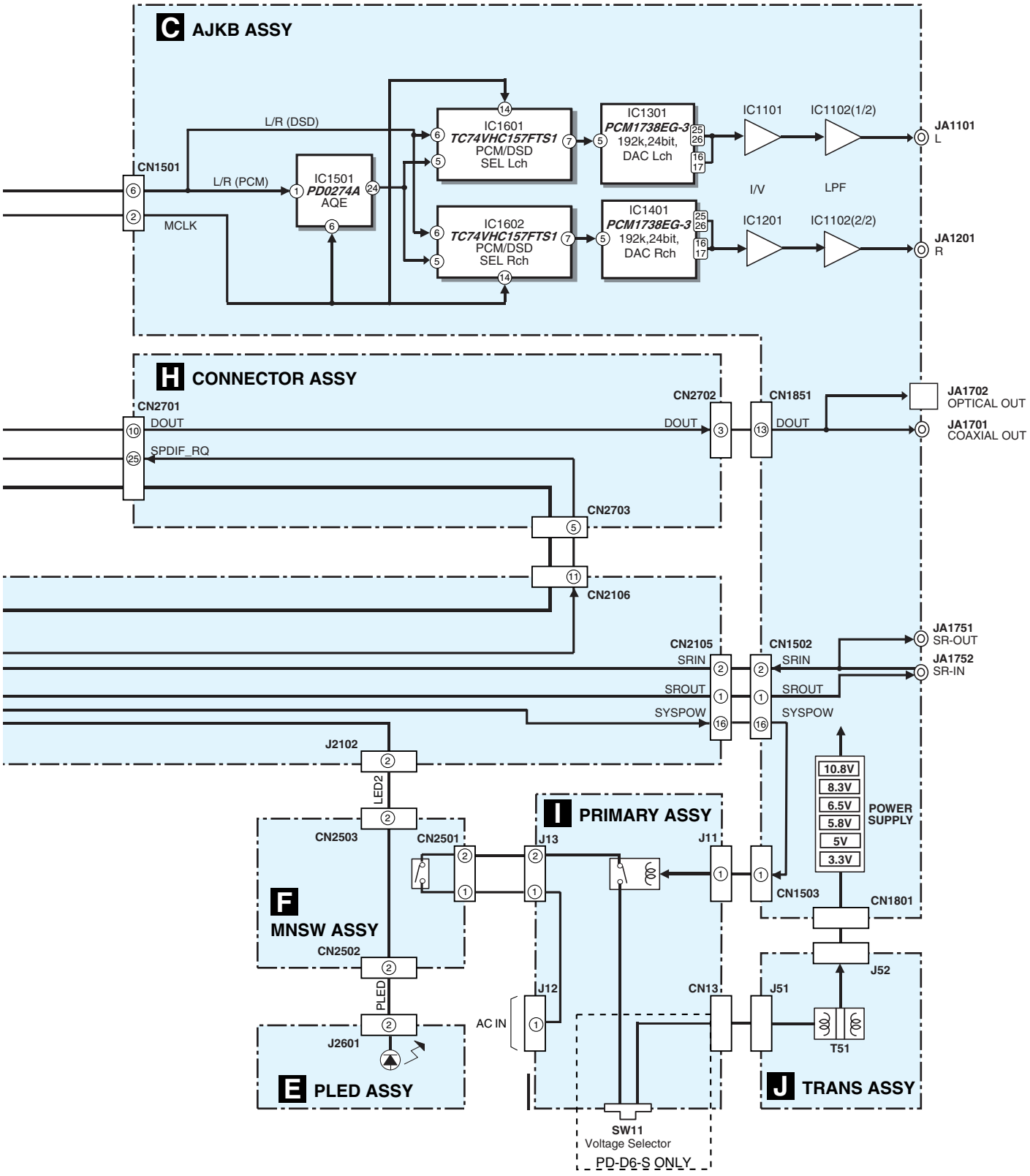
TRAVERSE MECHANISM ASSY-S PARTS LIST

Mark	No.	Description	Part No.
⚠	1	05SD Pickup Assy-s	OXX8019
	2	Spindle Motor N200	DXM1197
NSP	3	Guide Shaft VK1	DLA1940
NSP	4	Sub Guide Shaft VK1	DLA1941
NSP	5	Joint VK1B	DNK4272
NSP	6	Joint Spring VK1	DBK1235
	7	Stepping Motor VK1	DXM1201
NSP	8	Mechanism Frame VK1	DNK4160
	9	Precision Screw VK1	DBA1209
	10	Skew Screw VK1	DBA1211
	11	Skew Spring VK1	DBH1516
NSP	12	Stepping Screw	DBA1205
	13	Spindle Screw VK1(for Service)	DBA1252

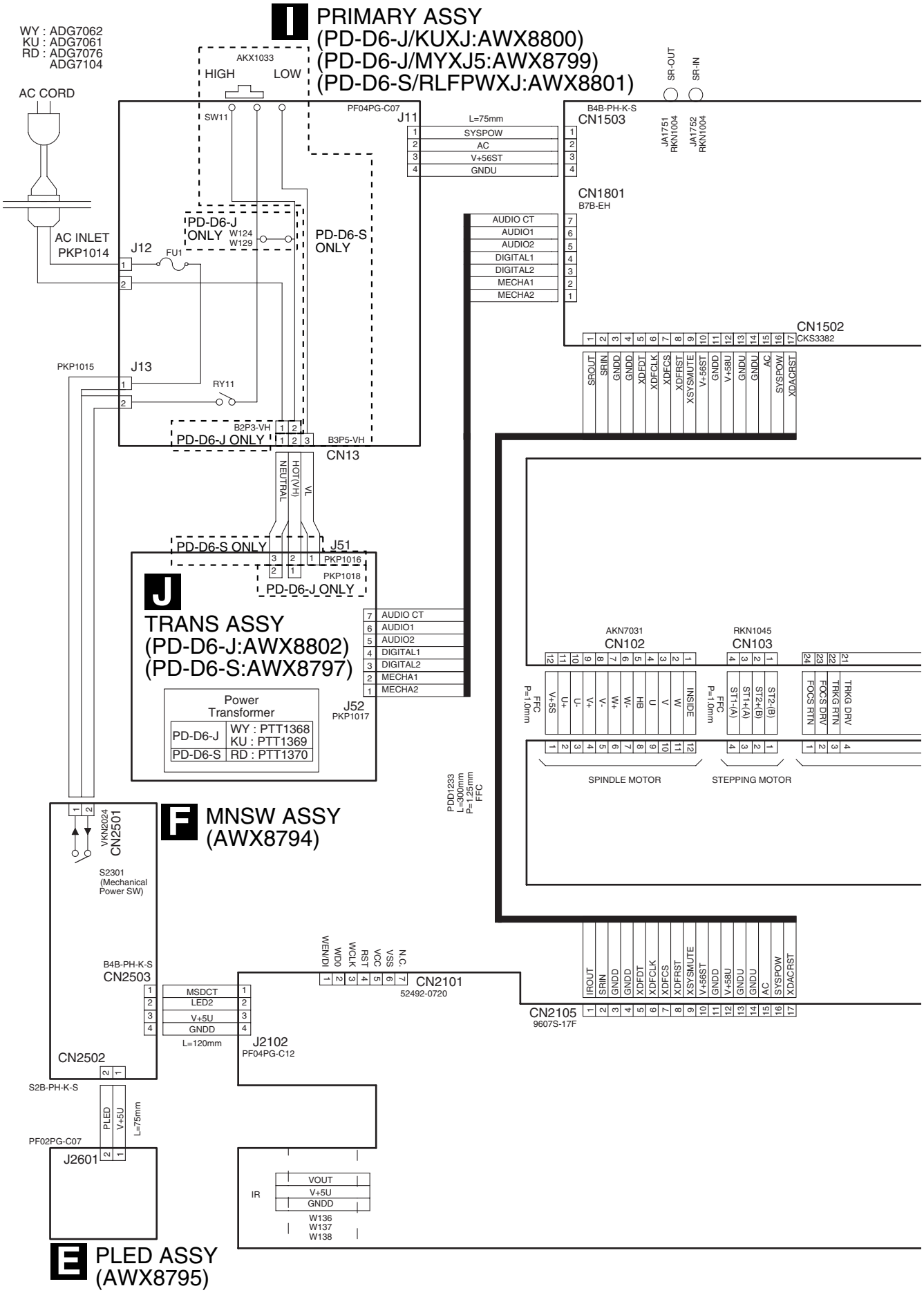
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

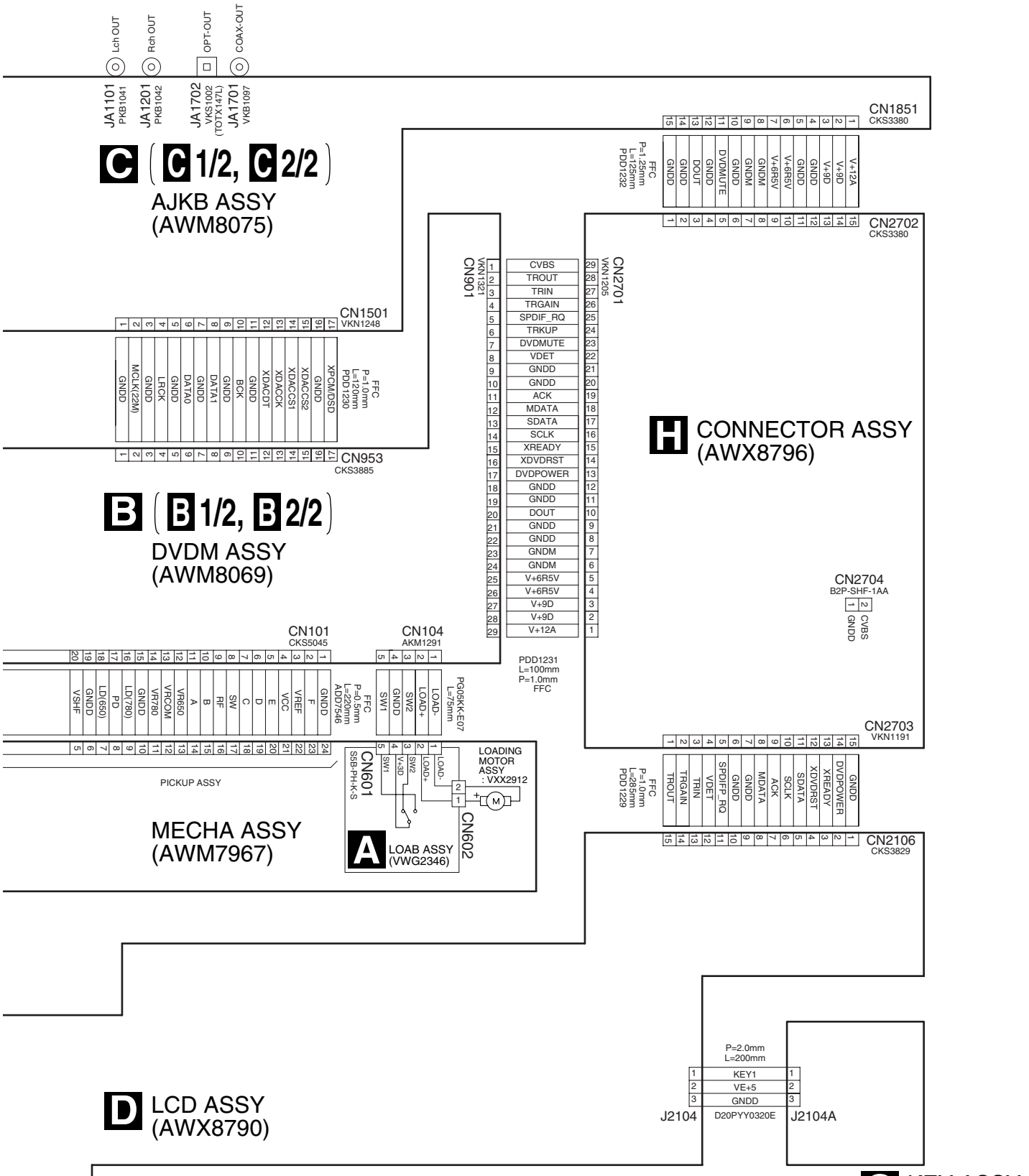
3.1 BLOCK DIAGRAM




C AJKB ASSY
CN1501
L/R (DSD)
L/R (PCM)
MCLK
IC1501
PD0274A
AQE
IC1601
TC74VHC157FTS1
PCM/DSD
SEL Lch
IC1602
TC74VHC157FTS1
PCM/DSD
SEL Rch
IC1301
PCM1738EG-3
192k,24bit,
DAC Lch
IC1401
PCM1738EG-3
192k,24bit,
DAC Rch
IC1101
IC1102(1/2)
I/V
LPF
IC1201
IC1102(2/2)
JA1101
L
JA1201
R
H CONNECTOR ASSY
CN2701
DOUT
SPDIF_RQ
CN2702
DOUT
CN1851
DOUT
JA1702
OPTICAL OUT
JA1701
COAXIAL OUT
CN2703
CN2106
CN2105
SRIN
SROUT
SYSPOW
CN1502
SRIN
SROUT
SYSPOW
JA1751
SR-OUT
JA1752
SR-IN
J2102
LED2
CN2503
CN2501
I PRIMARY ASSY
J13
J11
CN1503
10.8V
8.3V
6.5V
5.8V
5V
3.3V
POWER
SUPPLY
CN1801
F
MNSW ASSY
CN2502
PLED
J2601
E PLED ASSY
J12
AC IN
CN13
J51
J52
T51
J TRANS ASSY
SW11
Voltage Selector
PD-D6-S ONLY

3.2 LOAB ASSY and OVERALL WIRING CONNECTION DIAGRAM

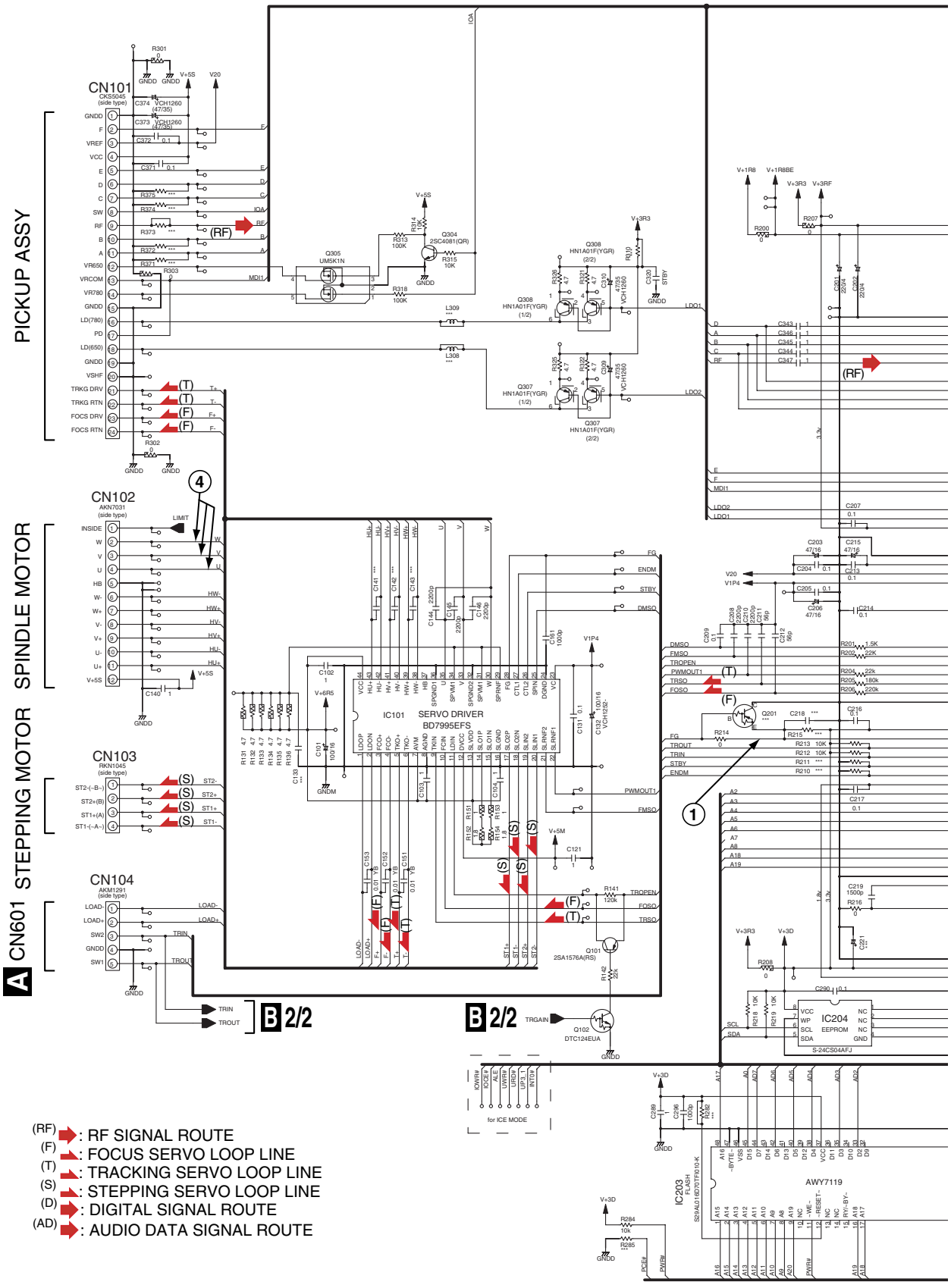


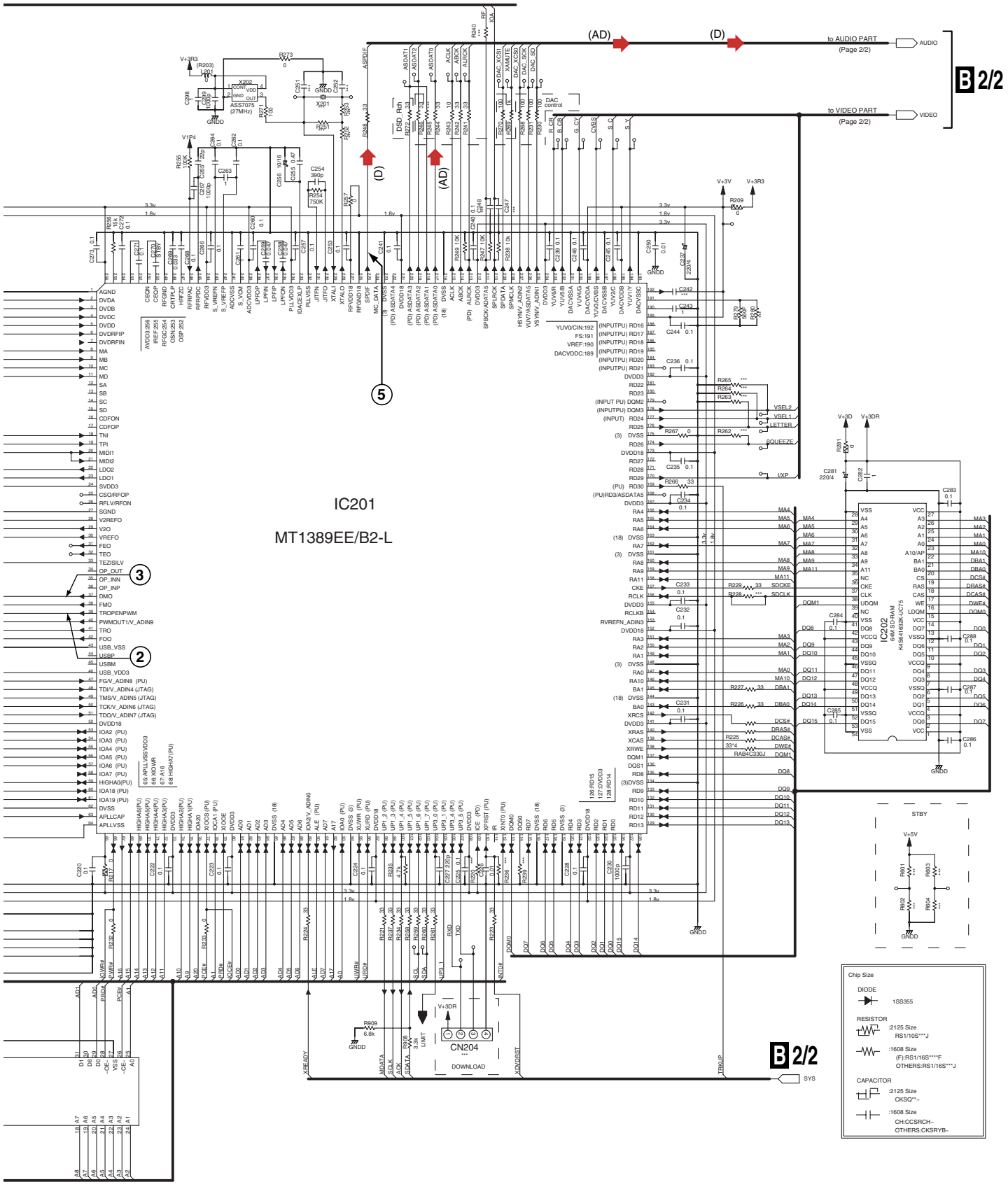


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- : The power supply is shown with the marked box.

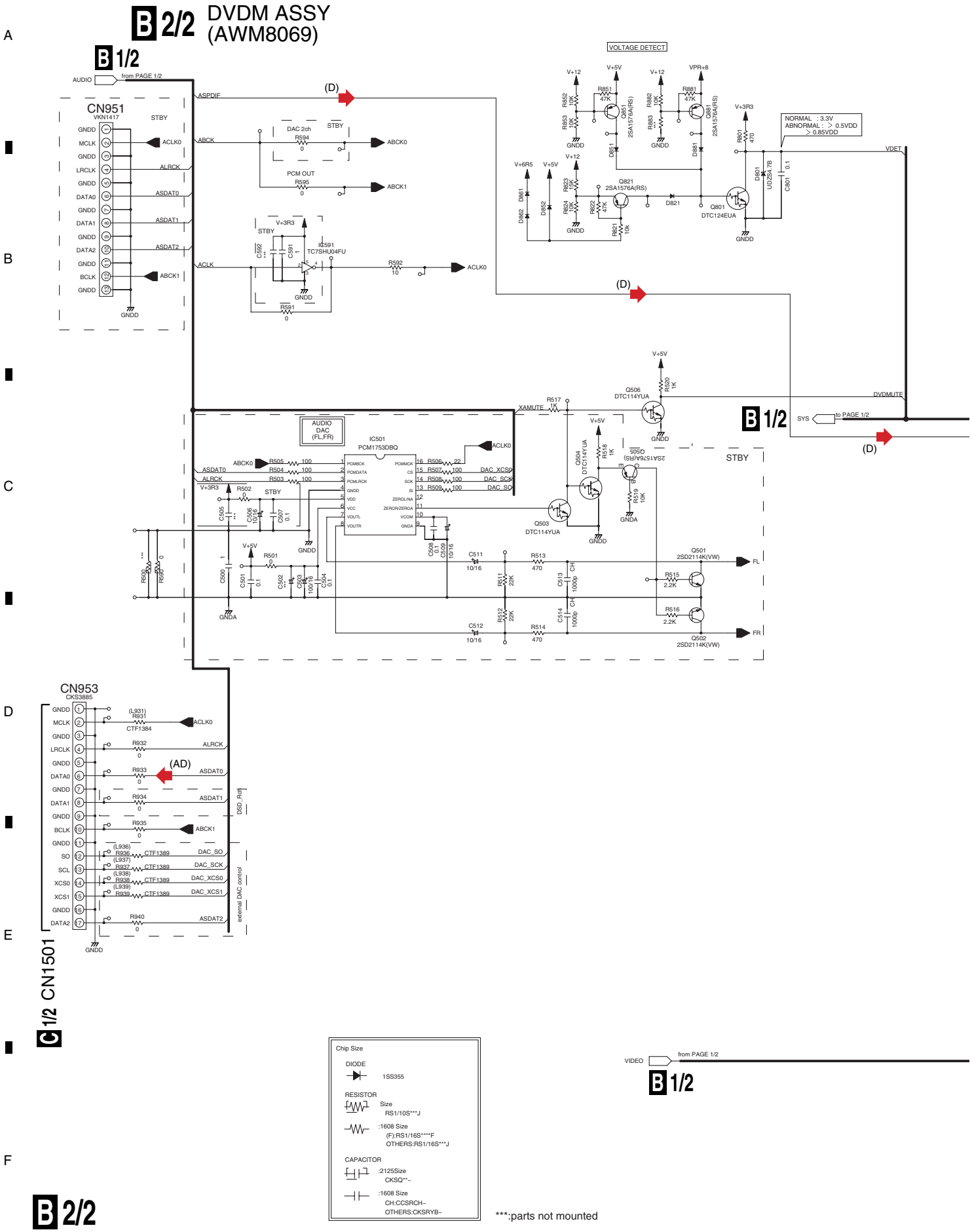
3.3 DVDM ASSY (1/2)

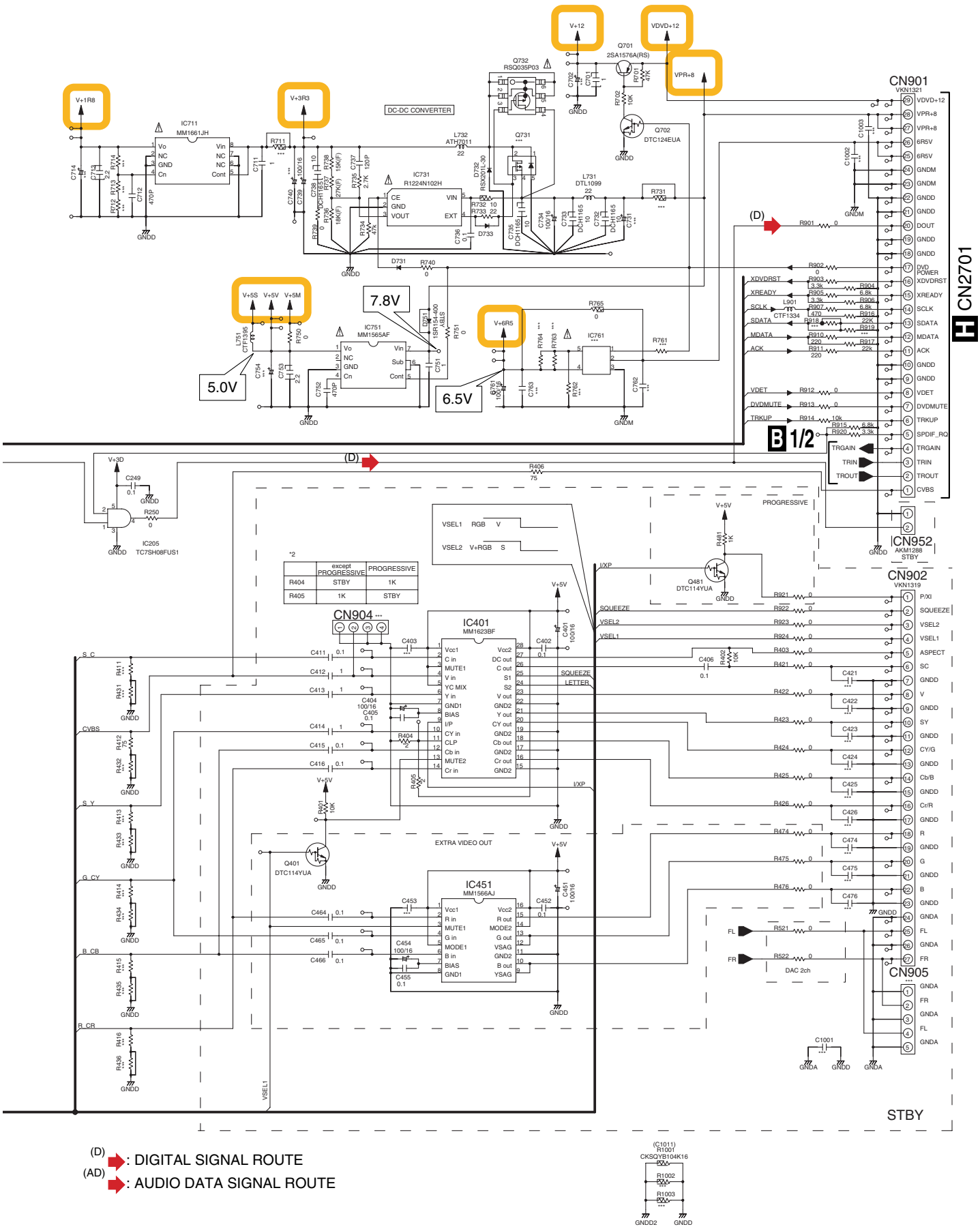
B 1/2 DVDM ASSY (AWM8069)



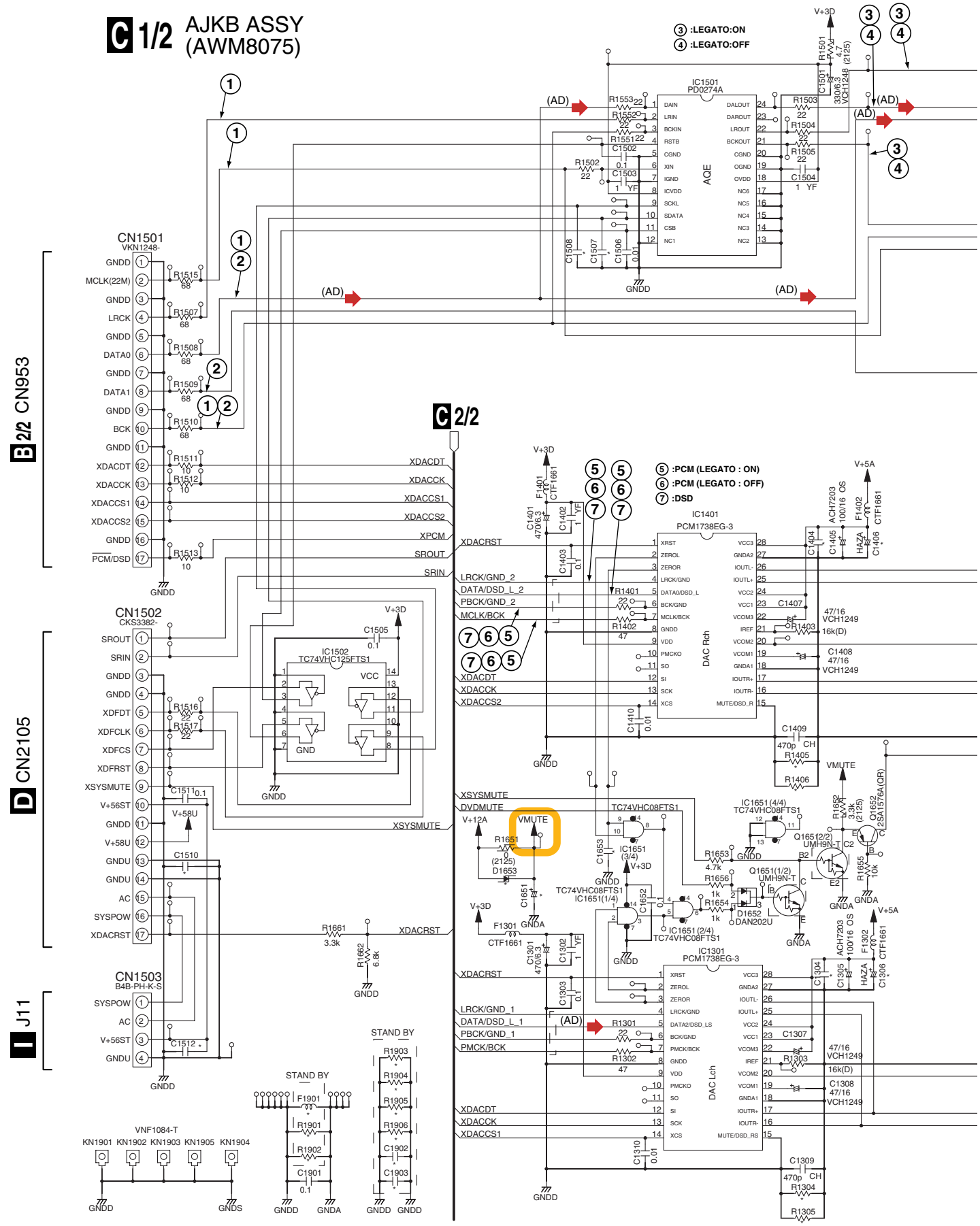

IC201
MT1389EE/B2-L
to AUDIO PART
(Page 2/2)
AUDIO
to VIDEO PART
(Page 2/2)
VIDEO
(AD)
(D)
B 2/2
SYS
IC202
K4S641632K-UC75
CN204
DOWNLOAD
STBY
Chip Size
DIODE
1SS355
RESISTOR
:2125 Size
RS1/10S***J
:1608 Size
(F):RS1/16S***F
OTHERS:RS1/16S***J
CAPACITOR
:2125 Size
CKSQ**-
:1608 Size
CH:CCSRCH-
OTHERS:CKSRYB-

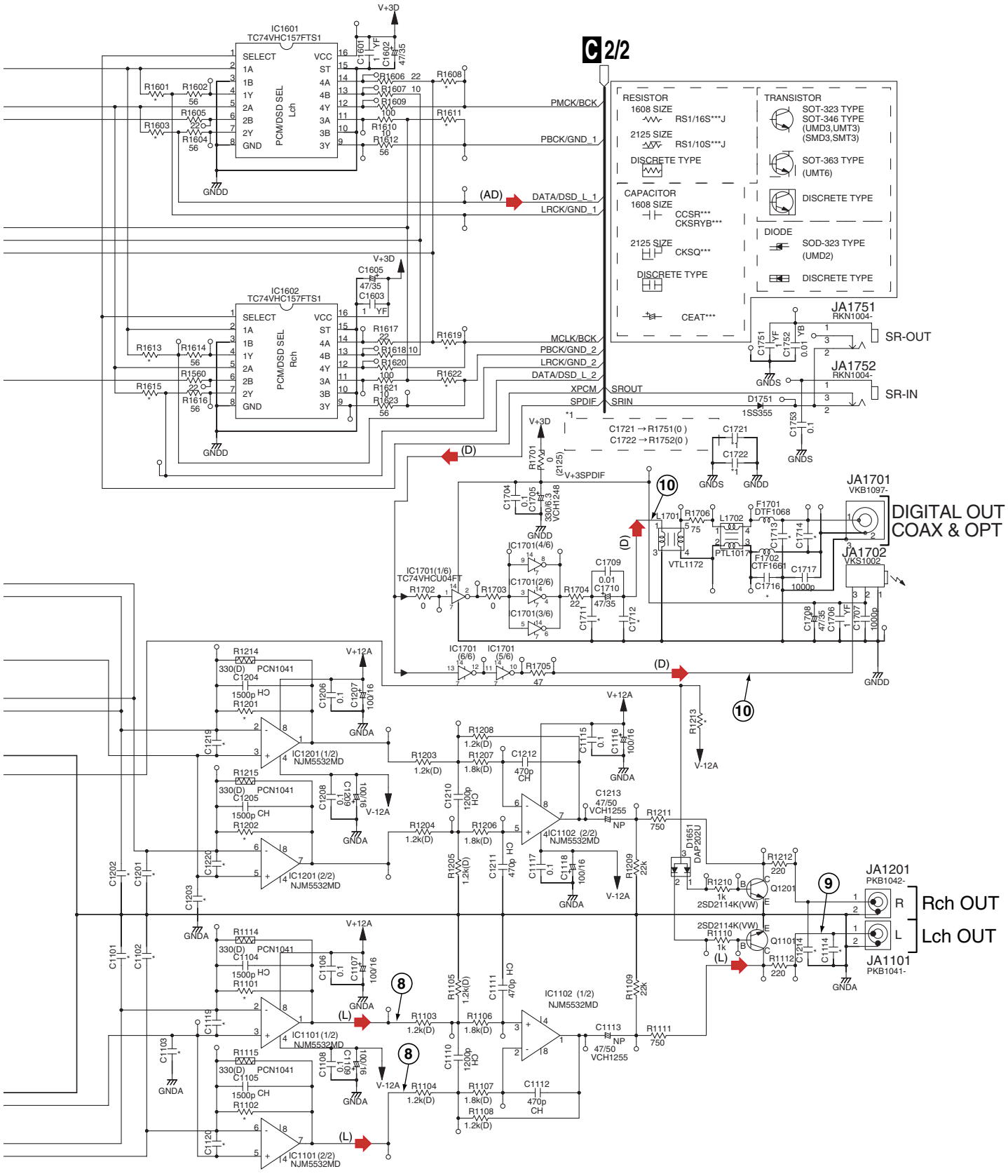
3.4 DVDM ASSY (2/2)





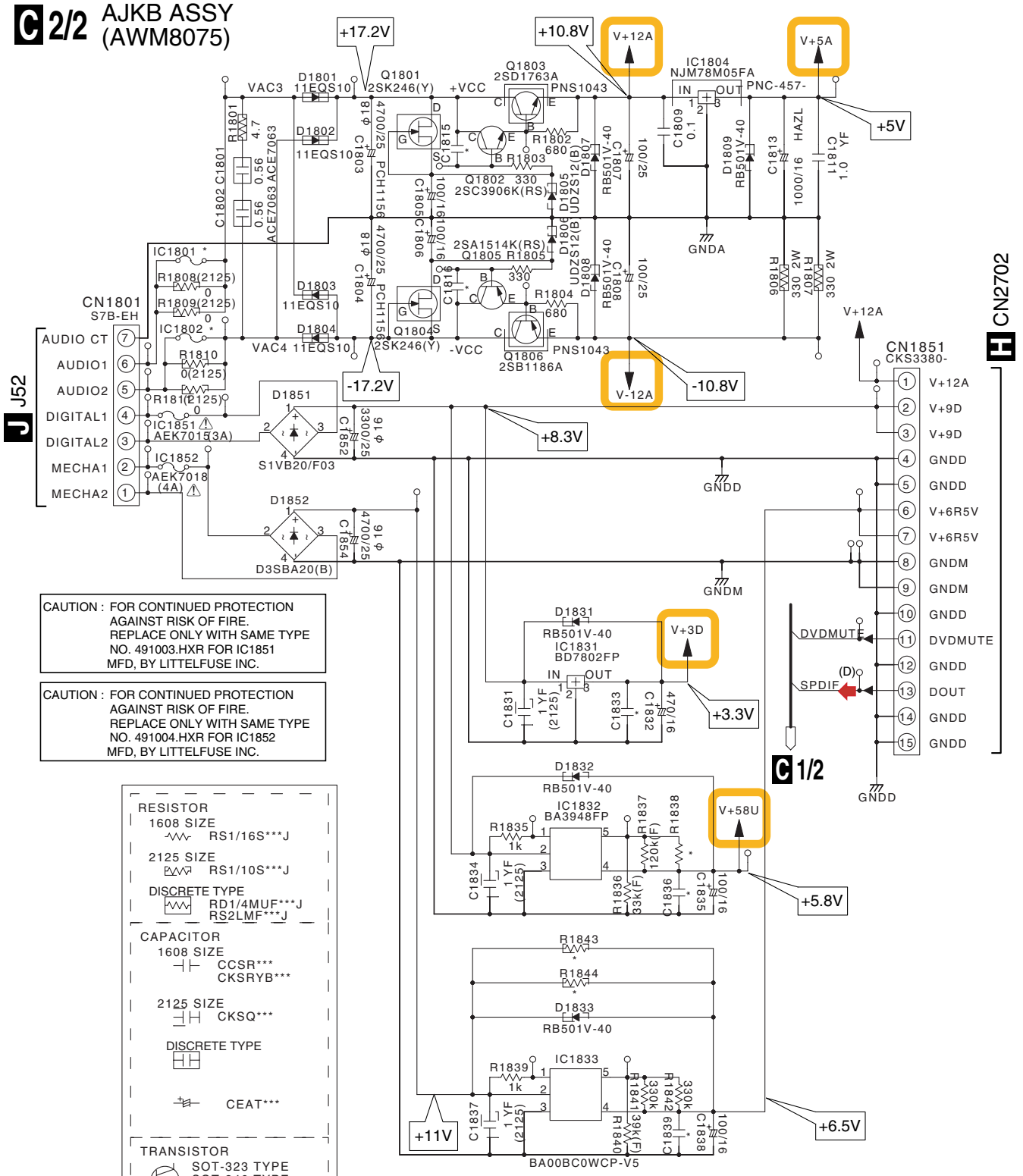
	except PROGRESSIVE	PROGRESSIVE
R404	STBY	1K
R405	1K	STBY


C 1/2 AJKB ASSY (AWM8075)
③ :LEGATO:ON
④ :LEGATO:OFF
⑤ :PCM (LEGATO : ON)
⑥ :PCM (LEGATO : OFF)
⑦ :DSD
IC1501 PD0274A
AQE
IC1401 PCM1738EG-3
DAC Rch
IC1301 PCM1738EG-3
DAC Lch
IC1502 TC74VHC125FTS1
TC74VHC08FTS1
CN1501 VKN1248-
CN1502 CKS3382-
CN1503 B4B-PH-K-S
B 2/2 CN953
D CN2105
I J11
C 2/2
STAND BY
VNF1084-T
KN1901 KN1902 KN1903 KN1905 KN1904
GNDD
GNDA
GNDS
V+3D
V+5A
V+58U
V+12A
VMUTE
XSYSMUTE
DVDMUTE
XDACRST
XDACDT
XDACCK
XDACCS1
XDACCS2
XPCM
SROUT
SRIN
LRCK/GND_2
DATA/DSL_L_2
PBCK/GND_2
MCLK/BCK
LRCK/GND_1
DATA/DSL_L_1
PBCK/GND_1
PMCK/BCK
(AD)
C 1/2


C 2/2
IC1601
TC74VHC157FTS1
IC1602
TC74VHC157FTS1
SELECT
PCM/DSD SEL
Lch
Rch
PMCK/BCK
PBCK/GND_1
DATA/DSD_L_1
LRCK/GND_1
MCLK/BCK
PBCK/GND_2
LRCK/GND_2
DATA/DSD_L_2
XPCM
SPDIF
SROUT
SRIN
RESISTOR
1608 SIZE
RS1/16S***J
2125 SIZE
RS1/10S***J
DISCRETE TYPE
CAPACITOR
1608 SIZE
CCSR***
CKSRYB***
2125 SIZE
CKSQ***
DISCRETE TYPE
CEAT***
TRANSISTOR
SOT-323 TYPE
SOT-346 TYPE
(UMD3,UMT3)
(SMD3,SMT3)
SOT-363 TYPE
(UMT6)
DISCRETE TYPE
DIODE
SOD-323 TYPE
(UMD2)
DISCRETE TYPE
JA1751
RKN1004-
SR-OUT
JA1752
RKN1004-
SR-IN
D1751
1SS355
JA1701
VKB1097-
DIGITAL OUT
COAX & OPT
JA1702
VKS1002
JA1201
PKB1042-
R
Rch OUT
L
Lch OUT
JA1101
PKB1041-
IC1701(1/6)
TC74VHCU04FT
IC1701(2/6)
IC1701(3/6)
IC1701(4/6)
IC1701 (6/6)
IC1701 (5/6)
IC1201(1/2)
NJM5532MD
IC1201 (2/2)
NJM5532MD
IC1101(1/2)
NJM5532MD
IC1101 (2/2)
NJM5532MD
IC1102 (1/2)
NJM5532MD
IC1102 (2/2)
NJM5532MD
Q1201
2SD2114K(VW)
Q1101
2SD2114K(VW)
D1651
DAP202U
V+3D
V+12A
V-12A
V+3SPDIF
GNDD
GNDA
GNDS
(AD)
(D)
(L)
C1721 →R1751(0)
C1722 →R1752(0)
(L): AUDIO SIGNAL ROUTE(Lch)
(D): DIGITAL SIGNAL ROUTE
(AD): AUDIO DATA SIGNAL ROUTE

3.6 AJKB ASSY (2/2)

C 2/2 AJKB ASSY (AWM8075)



C 2/2 C 2/2

A

B

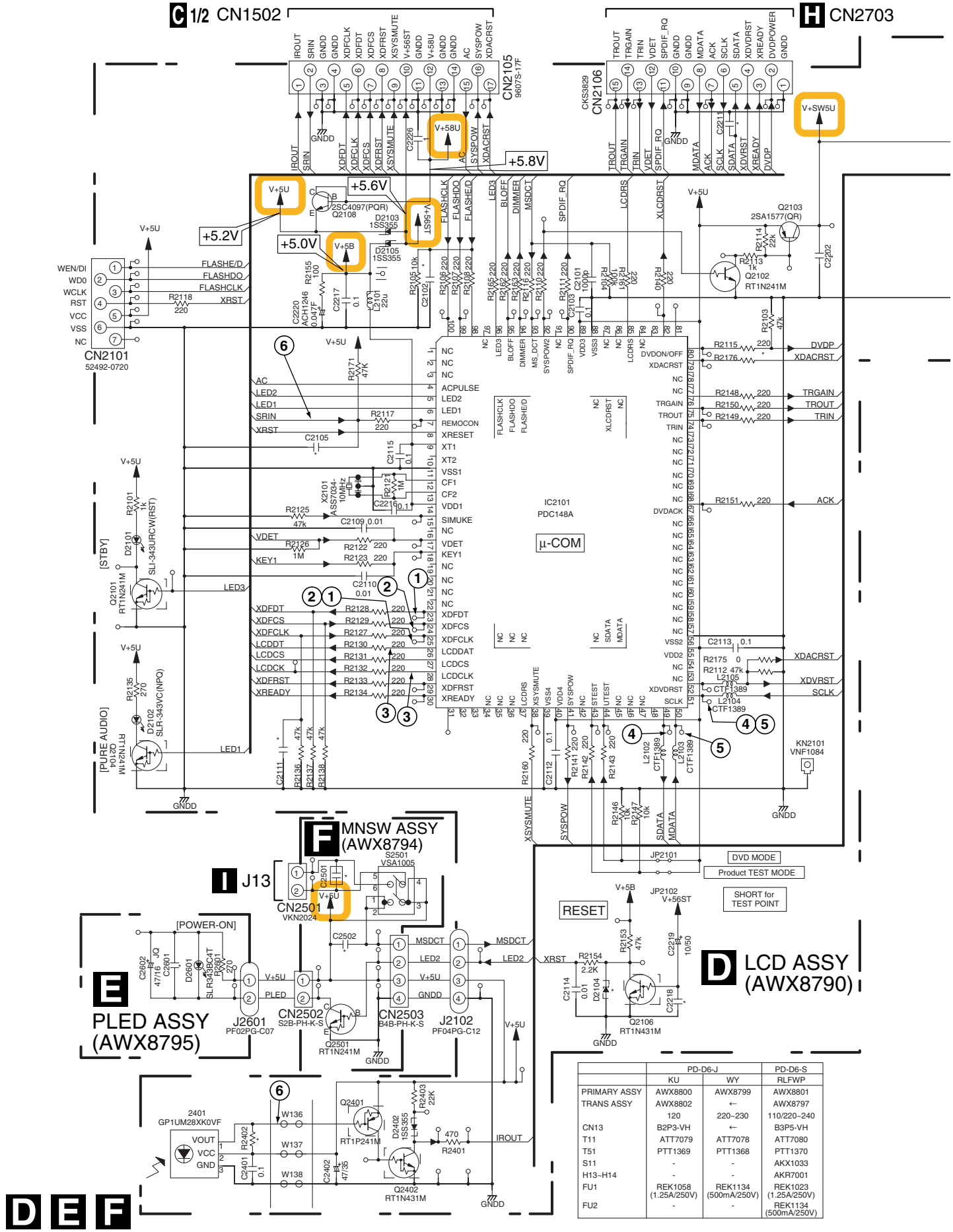
C

D

E

F

3.7 LCD, PLED, MNSW, KEY, CONNECTOR, PRIMARY and TRANS ASSYS

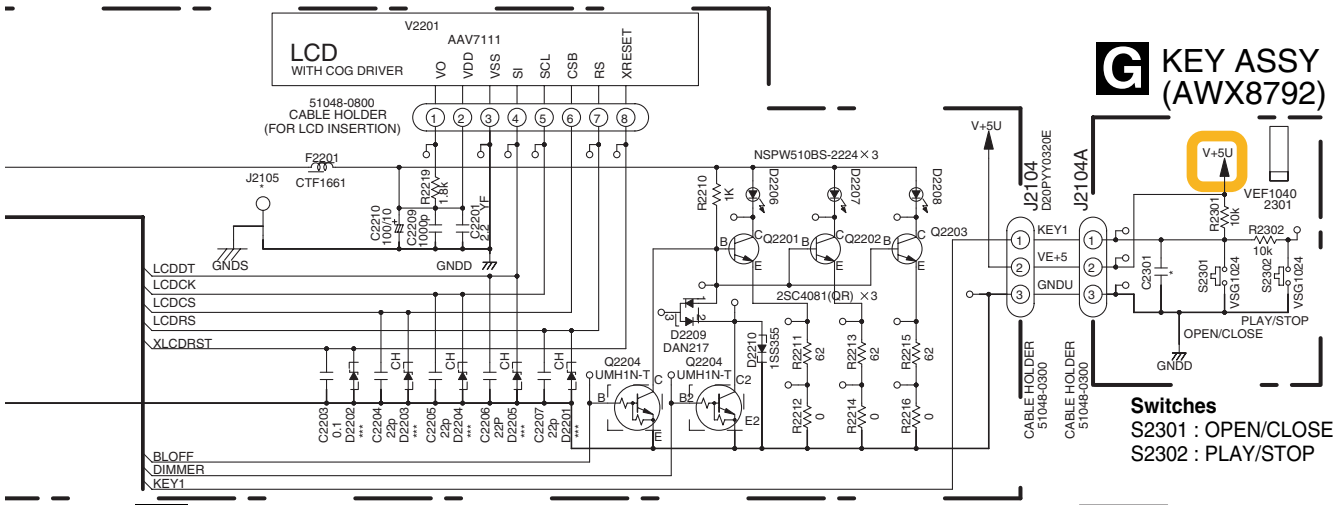


	PD-D6-J		PD-D6-S
	KU	WY	RLFWP
PRIMARY ASSY	AWX8800	AWX8799	AWX8801
TRANS ASSY	AWX8802	←	AWX8797
	120	220~230	110/220~240
CN13	B2P3-VH	←	B3P5-VH
T11	ATT7079	ATT7078	ATT7080
T51	PTT1369	PTT1368	PTT1370
S11	-	-	AKX1033
H13~H14	-	-	AKR7001
FU1	REK1058 (1.25A/250V)	REK1134 (500mA/250V)	REK1023 (1.25A/250V)
FU2	-	-	REK1134 (500mA/250V)

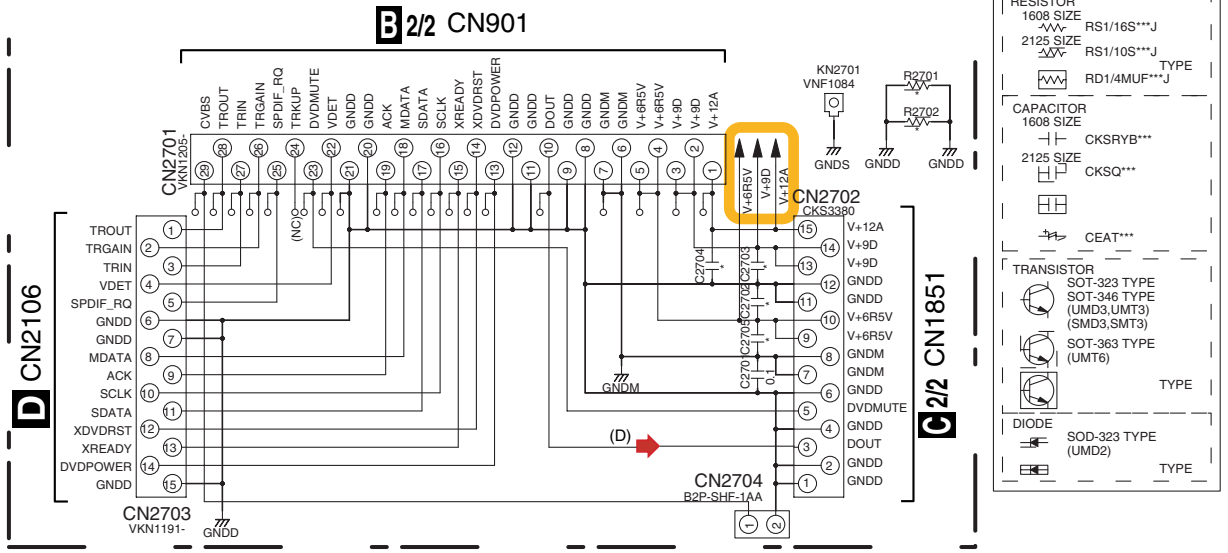
• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE AND RATINGS OF FUSE.

G KEY ASSY (AWX8792)



H CONNECTOR ASSY (AWX8796)


B 2/2 CN901
CN2701
VKN1205-
CVBS TROUT TRIN TRGAIN SPDIF_RQ TRKUP DVDMUTE VDET GNDD GNDD ACK MDATA SDATA SCLK XREADY XDVDRST DVDPOWER GNDD GNDD DOUT GNDD GNDD GNDM GNDM V+6R5V V+6R5V V+9D V+9D V+12A
KN2701
VNF1084
R2701
R2702
GNDS GNDD GNDD
CN2702
CKS3380
V+12A V+9D V+9D GNDD GNDD V+6R5V V+6R5V GNDM GNDD GNDD DVDMUTE GNDD DOUT GNDD GNDD
C 2/2 CN1851
D CN2106
TROUT TRGAIN TRIN VDET SPDIF_RQ GNDD GNDD MDATA ACK SCLK SDATA XDVDRST XREADY DVDPOWER GNDD
CN2703
VKN1191-
GNDD
(D)
CN2704
B2P-SHF-1AA

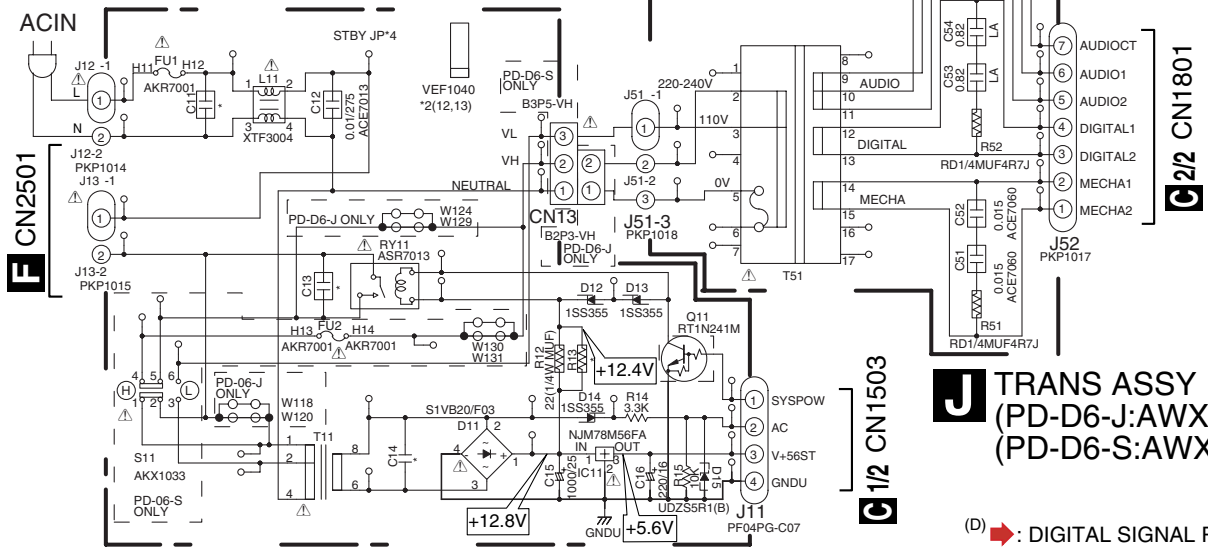
NOTES

RESISTOR
1608 SIZE RS1/16S***J
2125 SIZE RS1/10S***J
TYPE RD1/4MUF***J

CAPACITOR
1608 SIZE CKSRYB***
2125 SIZE CKSQ***
CEAT***

TRANSISTOR
SOT-323 TYPE
SOT-346 TYPE (UMD3,UMT3) (SMD3,SMT3)
SOT-363 TYPE (UMT6)
TYPE

DIODE
SOD-323 TYPE (UMD2)
TYPE



J TRANS ASSY (PD-D6-J:AWX8802) (PD-D6-S:AWX8797)

(D) ➡ : DIGITAL SIGNAL ROUTE

I PRIMARY ASSY (PD-D6-J/KUXJ:AWX8800)(PD-D6-J/MYXJ5:AWX8799) (PD-D6-S/RLFPWXJ:AWX8801)

D G H I J

3.8 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

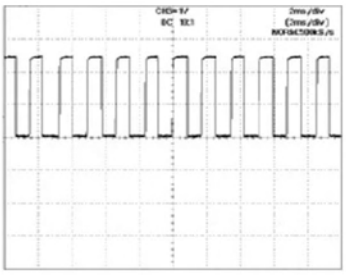
B DVDM ASSY

Measurement condition ;

No. 1 to 10 : reference A1 (DVD), T2-chp 19, Color-bar

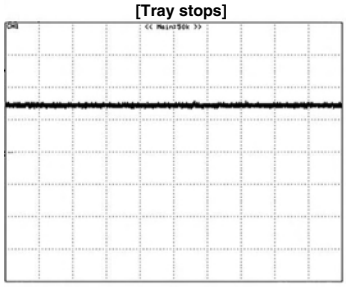
No. 11 to 14 : reference A1 (DVD), T1

1 **IC201-pin47 [FG]**
V: 1V/div. H: 2msec/div.

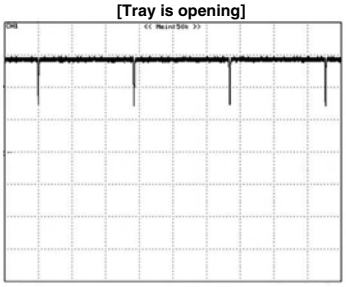


2 **IC201-pin 39 [TROPENPWM]**
V: 1V/div. H: 5µsec/div.

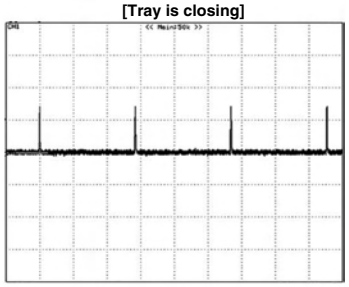
[Tray stops]



[Tray is opening]

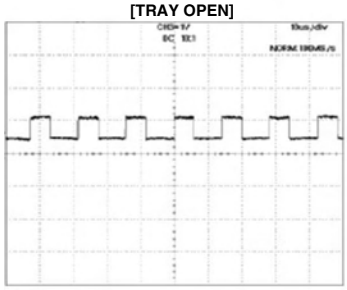


[Tray is closing]



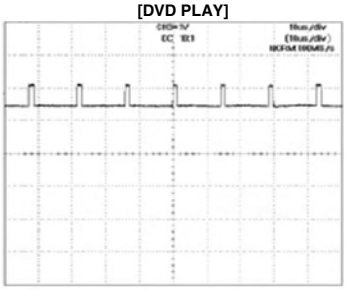
3 **IC201-pin37 [DMSO]**
V: 1V/div. H: 10µsec/div.

[TRAY OPEN]



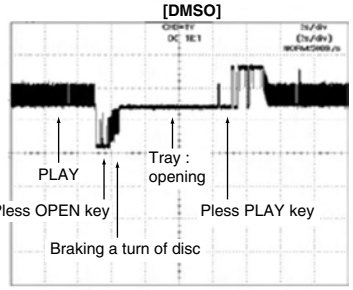
V: 1V/div. H: 10µsec/div.

[DVD PLAY]

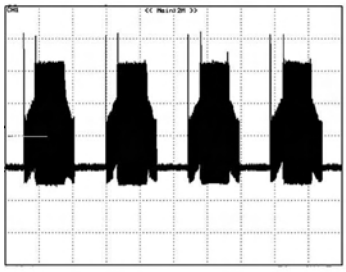


V: 1V/div. H: 2sec/div.

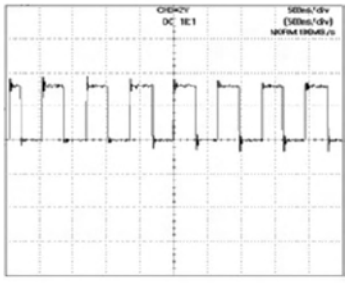
[DMSO]



4 **CN102-pin 2, 3, 4 (IC101-pin 30, 33, 35)**
[SPINDLE (WVU)]
V: 2V/div. H: 2msec/div.



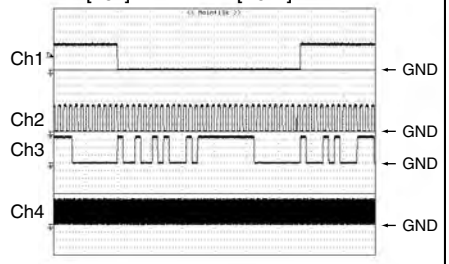
5 **IC201-pin225 [ASPDIF AUDIO DIGITAL SIGNAL]**
V: 2V/div. H: 500nsec/div.



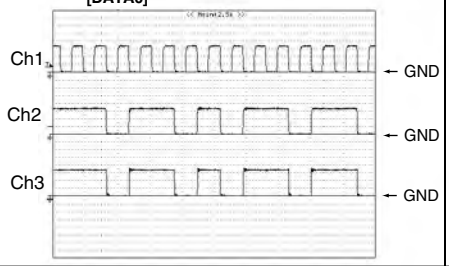
C AJKB ASSY

Measurement condition ;
No.1, No.3-No.6, No.8-No.10 : 1kHz, 0 dB(L/R), PCM
No.2, No.7-No.9 : 1kHz, 0 dB(L/R), DSD

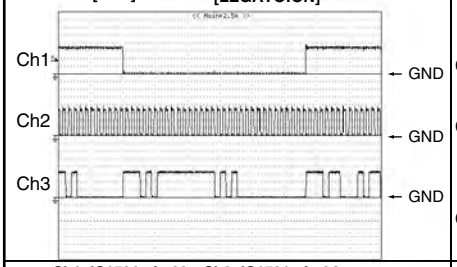
① Ch1: CN1501-pin 4 [LRCK] Ch3: CN1501-pin 6 [DATA0] Ch2: CN1501-pin 10 [BCK] Ch4: CN1501-pin 2 [MCLK] V: 1V/div. H: 2us/div.



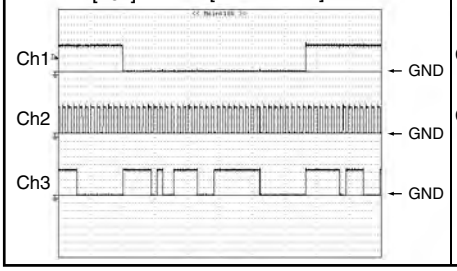
② Ch1: CN1501-pin 10 [BCK] Ch3: CN1501-pin 8 [DATA1] Ch2: CN1501-pin 6 [DATA0] V: 1V/div. H: 500ns/div.



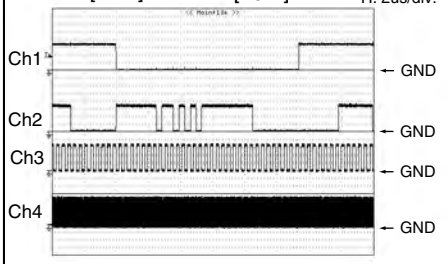
③ Ch1: IC1501-pin 22 [LRCK] Ch3: IC1501-pin 24 [DATA] Ch2: IC1501-pin 21 [BCK] [LEGATO:ON] V: 1V/div. H: 500ns/div.



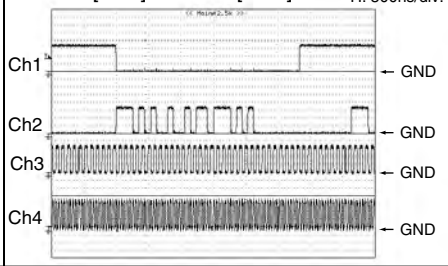
④ Ch1: IC1501-pin 22 [LRCK] Ch3: IC1501-pin 24 [DATA] Ch2: IC1501-pin 21 [BCK] [LEGATO:OFF] V: 1V/div. H: 2us/div.



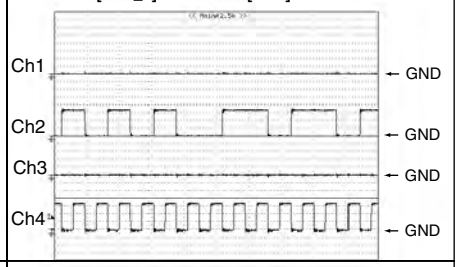
⑤ Ch1: IC1401-pin 4 [LRCK] Ch3: IC1401-pin 6 [BCK] [PCM] LEGATO: ON Ch2: IC1401-pin 5 [DATA] Ch4: IC1401-pin 7 [MCLK] V: 1V/div. H: 2us/div.



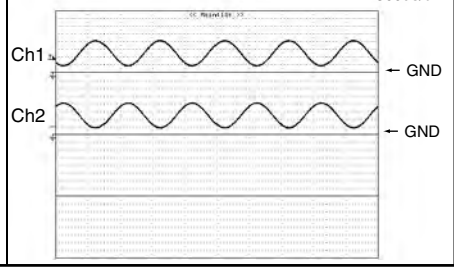
⑥ Ch1: IC1401-pin 4 [LRCK] Ch3: IC1401-pin 6 [BCK] [PCM] LEGATO: OFF Ch2: IC1401-pin 5 [DATA] Ch4: IC1401-pin 7 [MCLK] V: 1V/div. H: 500ns/div.



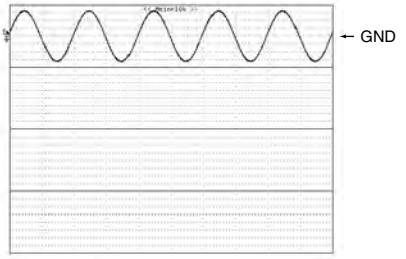
⑦ Ch1: IC1401-pin 4 [GND] Ch3: IC1401-pin 6 [GND] [DSD] Ch2: IC1401-pin 5 [DSD_L] Ch4: IC1401-pin 7 [BCK] V: 1V/div. H: 500ns/div.



⑧ Ch1: IC1101-pin 1 [LOUT1] Ch3: IC1101-pin 7 [LOUT2] V: 1V/div. H: 500us/div.



⑨ JA1101 [Lch Out] V: 10V/div. H: 500us/div.

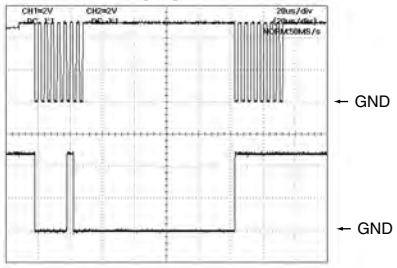


⑩ Ch1: L1701-pin 1 [COAXIAL Out] Ch2: JA1702-pin 3 [OPTICAL Out] V: Ch 1 0.5V/div. Ch 2 1V/div. H: 200ns/div.

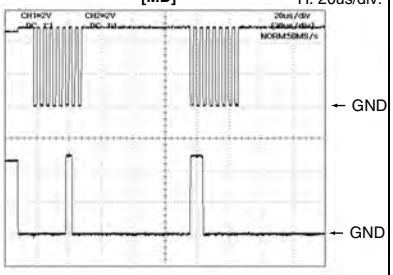
D LCD ASSY

SYSTEM Microcomputer(IC)<–>Each part communication waveform

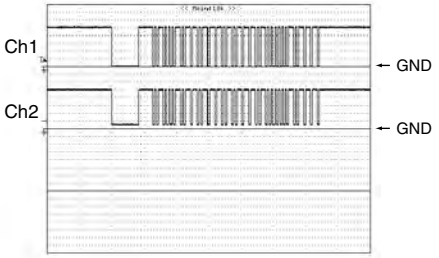
① Ch1: IC2101-pin 25 [XDFCLK] Ch2: IC2101-pin 23 [XDFDT] [MD] V: 2V/div. H: 20us/div.



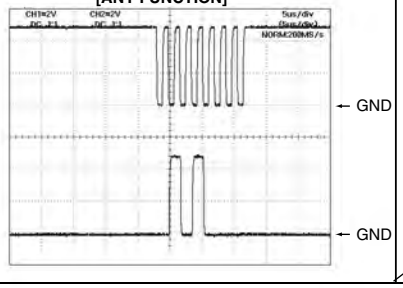
② Ch1: IC2101-pin 25 [XDFCLK] Ch2: IC2101-pin 24 [XDFCS] [MD] V: 2V/div. H: 20us/div.



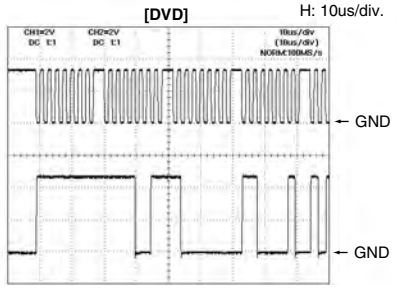
⑥ Ch1: 2401-pin 1 [2401Out] (IR Receiver Out) Ch2: IC2101-pin 7 [SR IN] V: 1V/div. H: 10ns/div.



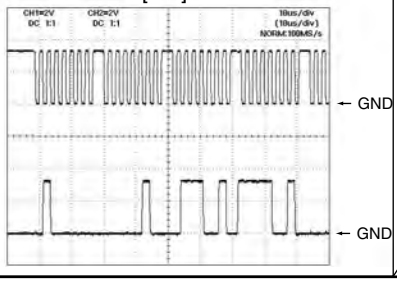
③ Ch1: IC2101-pin 28 [LCDCLK] Ch2: IC2101-pin 26 [LCDDATA] [ANY FUNCTION] V: 2V/div. H: 5us/div.



④ Ch1: IC2101-pin 51 [SCLK] Ch2: IC2101-pin 49 [SDATA] [DVD] V: 2V/div. H: 10us/div.



⑤ Ch1: IC2101-pin 51 [SCLK] Ch2: IC2101-pin 50 [MDATA] [DVD] V: 2V/div. H: 10us/div.



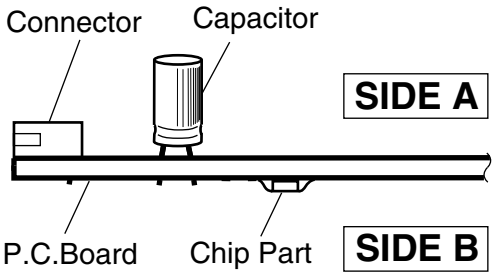
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

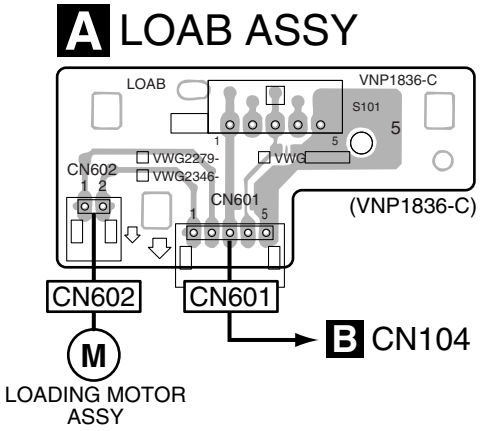
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

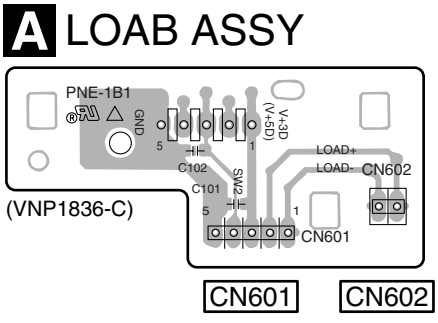


4.1 LOAB ASSY

SIDE A



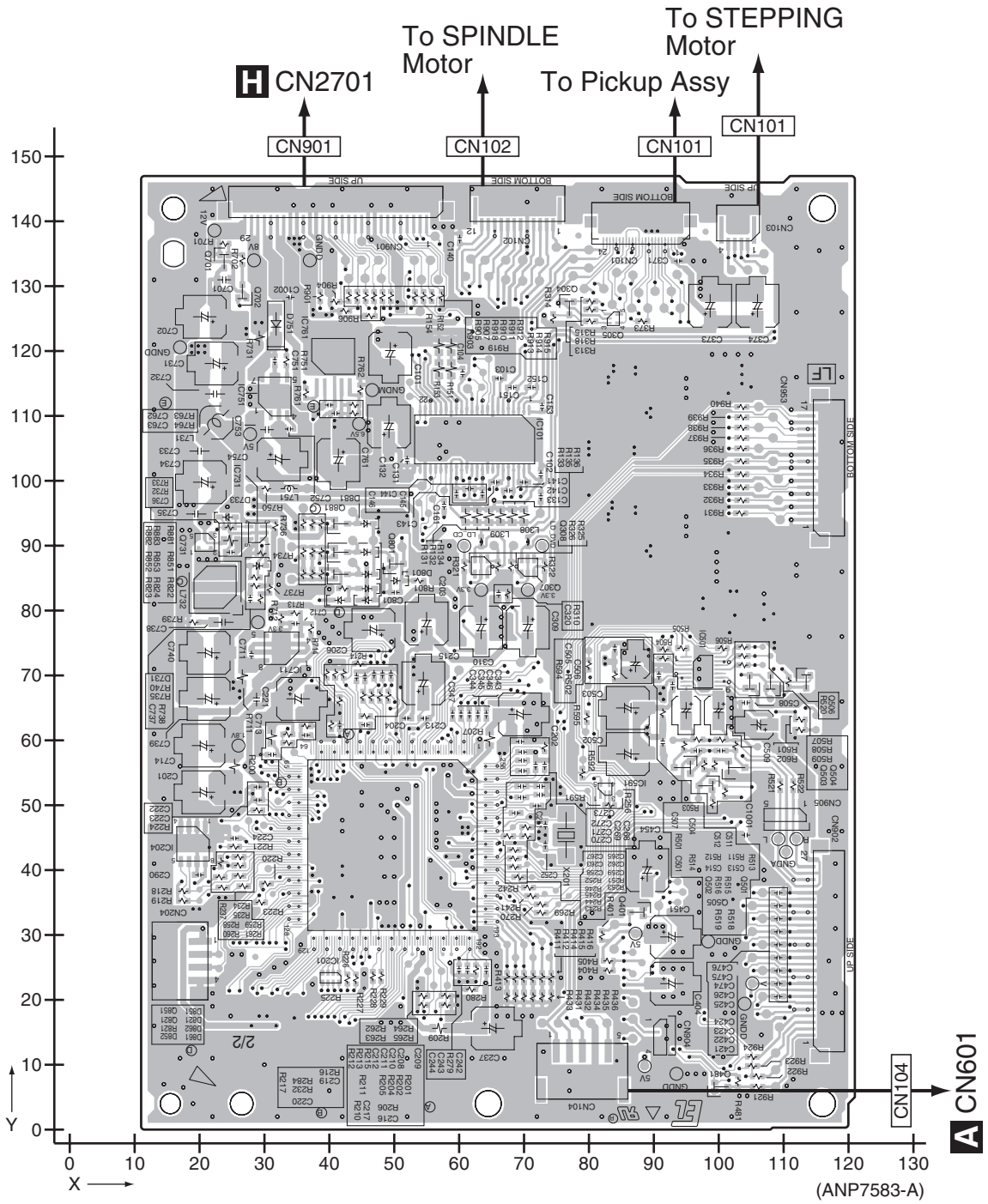
SIDE B



4.2 DVDM ASSY

SIDE A **SIDE A**

B DVDM ASSY

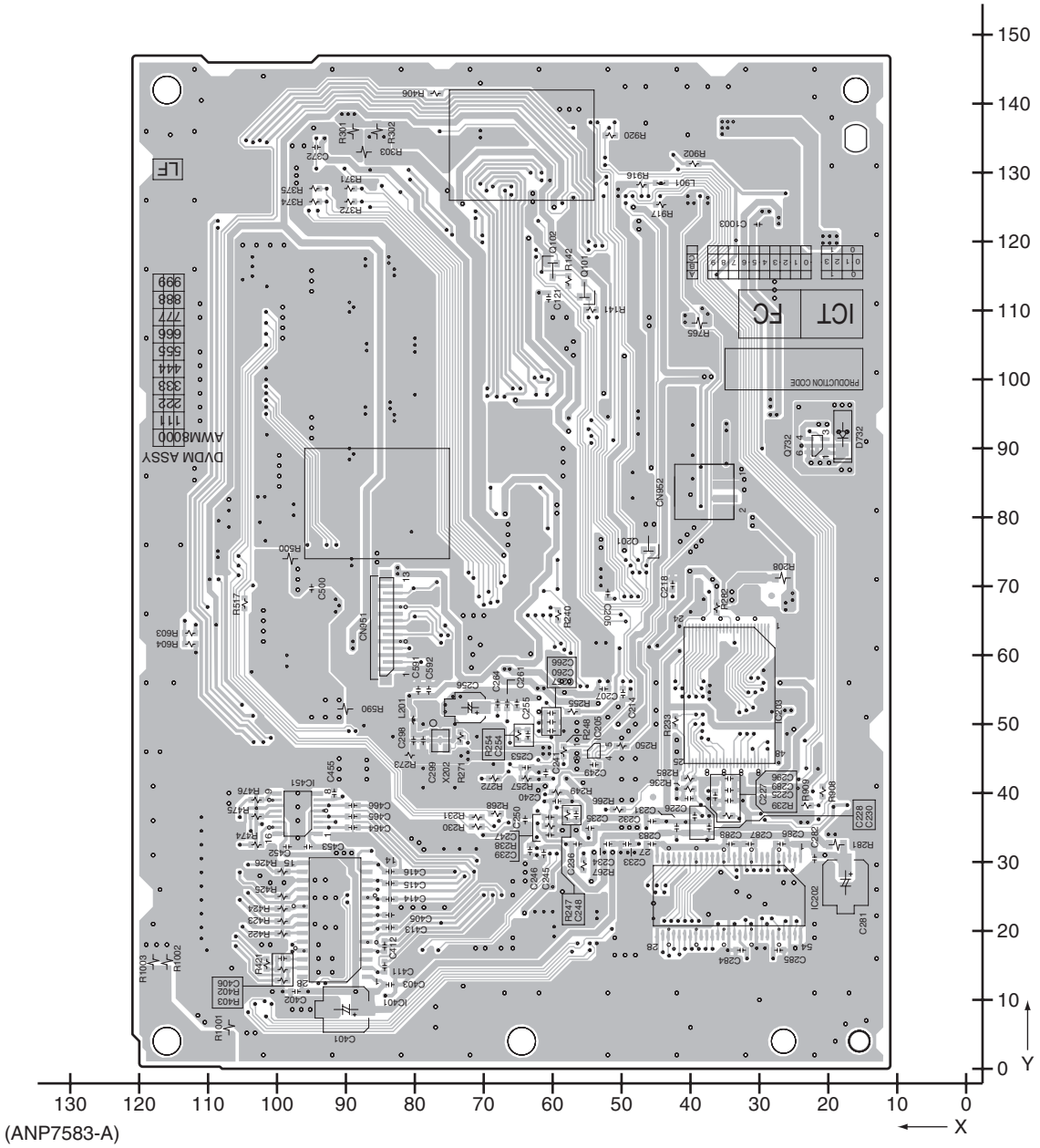


B **B**

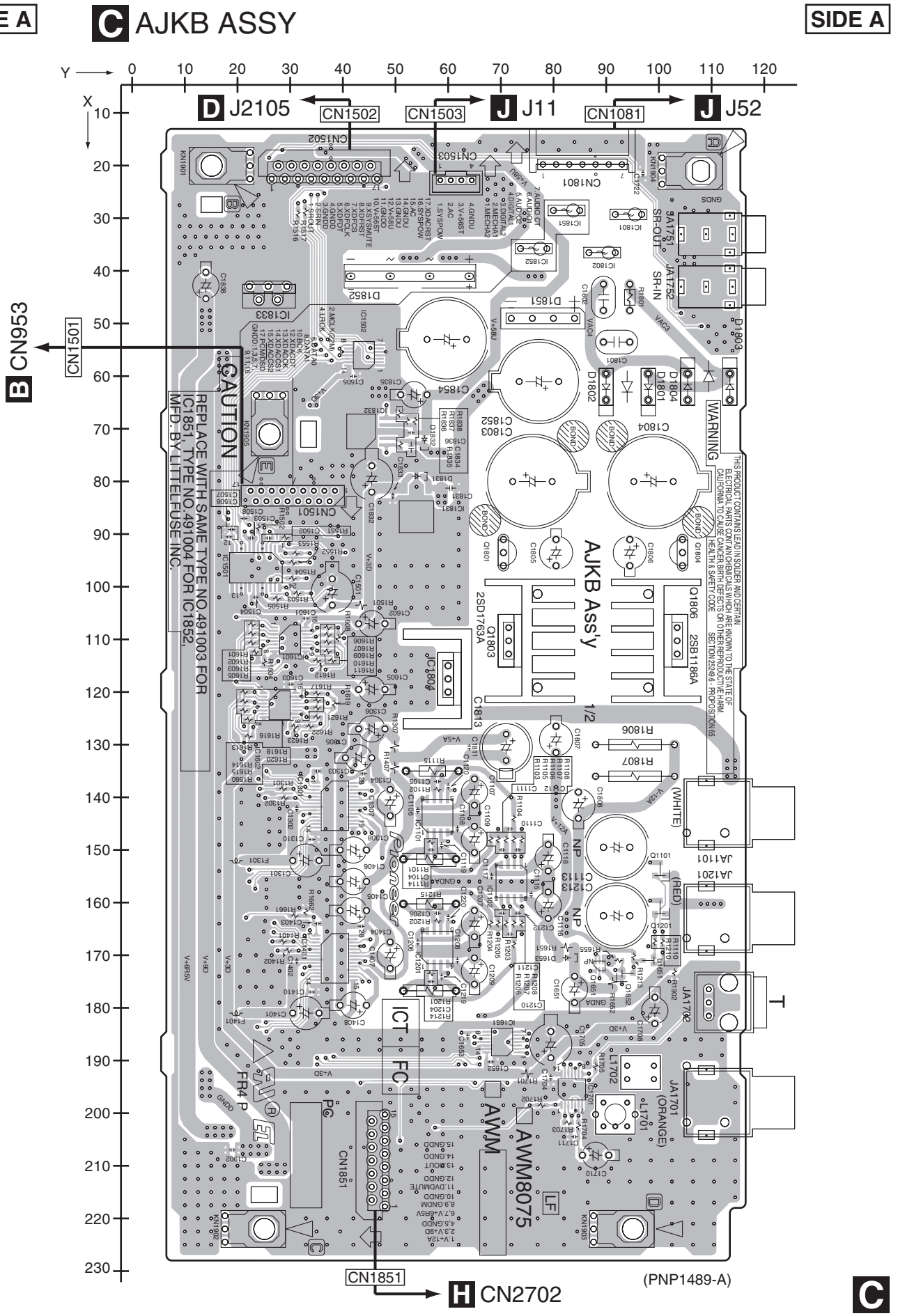
SIDE B

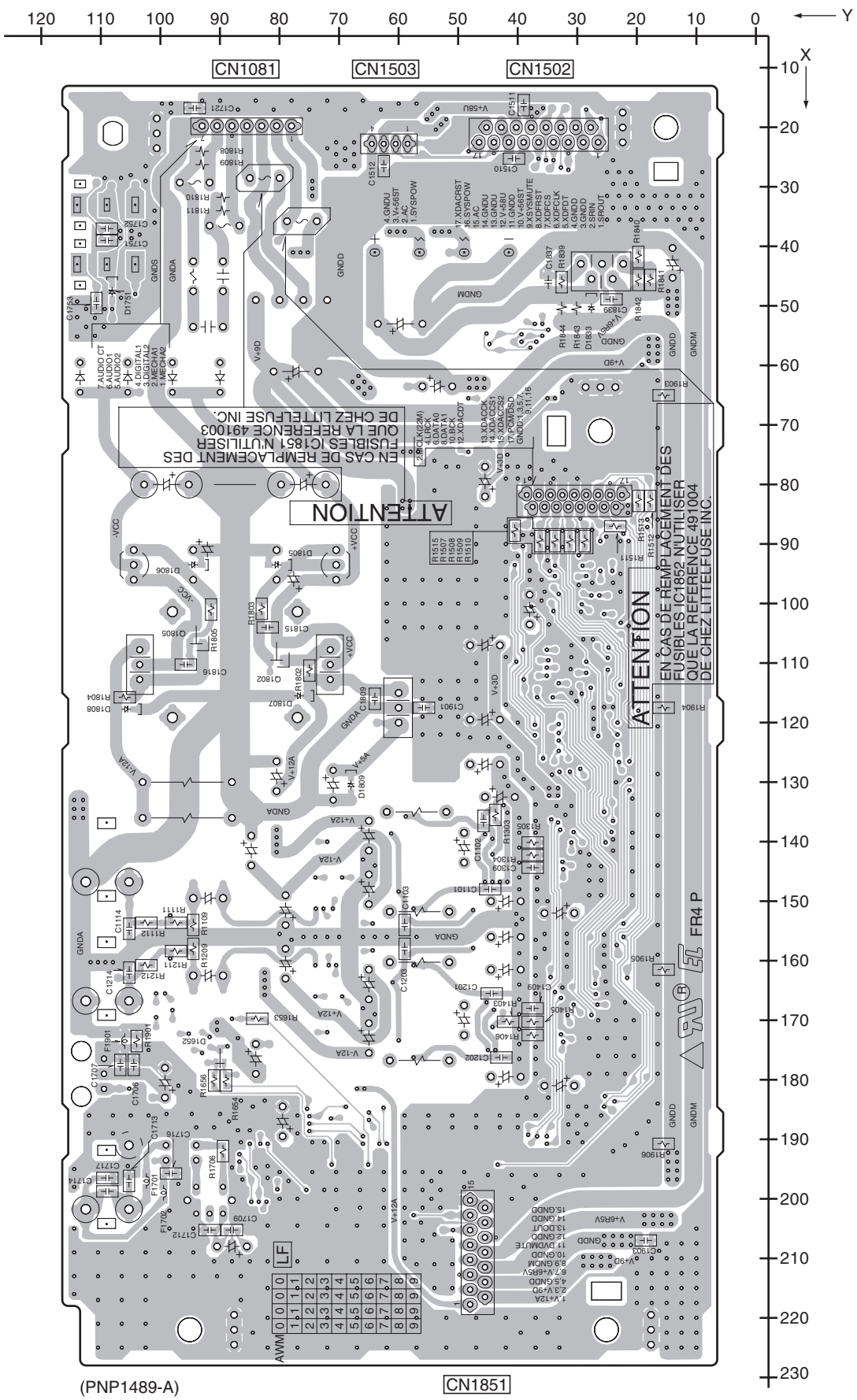
SIDE B

B DVDM ASSY



4.3 AJKB ASSY

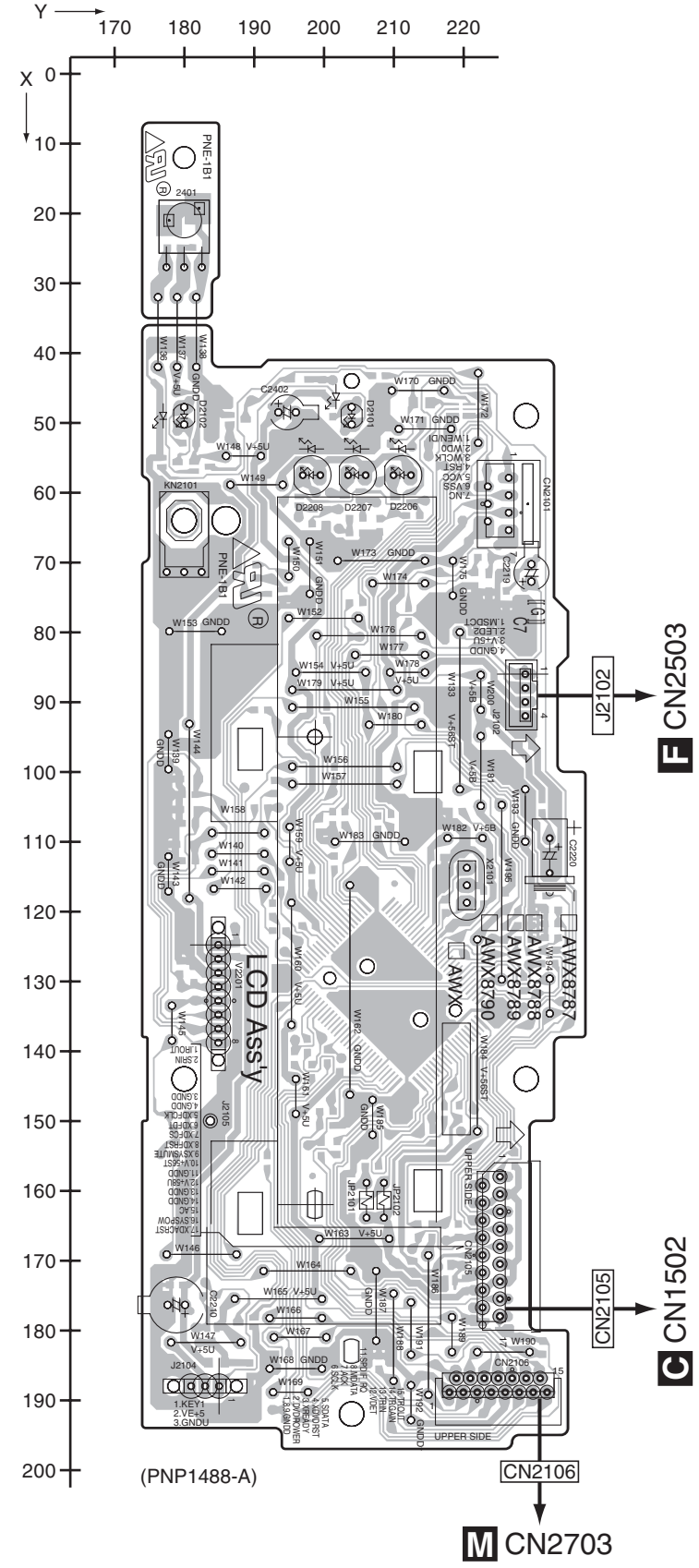

SIDE A
C AJKB ASSY
SIDE A
D J2105
CN1502
CN1503
J J11
CN1081
J J52
B CN953
CN1501
CAUTION
REPLACE WITH SAME TYPE NO.491003 FOR IC1851, TYPE NO.491004 FOR IC1852, MFD. BY LITTELFUSE INC.
WARNING
THIS PRODUCT CONTAINS LEAD IN SOLDER AND CERTAIN ELECTRICAL PARTS CONTAIN CHEMICALS WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. HEALTH & SAFETY CODE SECTION 25249.6 - PROPOSITION 65
AJKB Ass'y
ICT FC
AWM
AWM8075
FR4 P
CN1851
CN1852
H CN2702
(PNP1489-A)


CN1081
CN1503
CN1502
CN1851
ATTENTION
EN CAS DE REMPLACEMENT DES FUSIBLES IC1852 N'UTILISER QUE LA REFERENCE 491004 DE CHEZ LITTELFUSE INC.
EN CAS DE REMPLACEMENT DES FUSIBLES IC1851 N'UTILISER QUE LA REFERENCE 491003 DE CHEZ LITTELFUSE INC.
FR4 P
LF
(PNP1489-A)

4.4 LCD ASSY

SIDE A

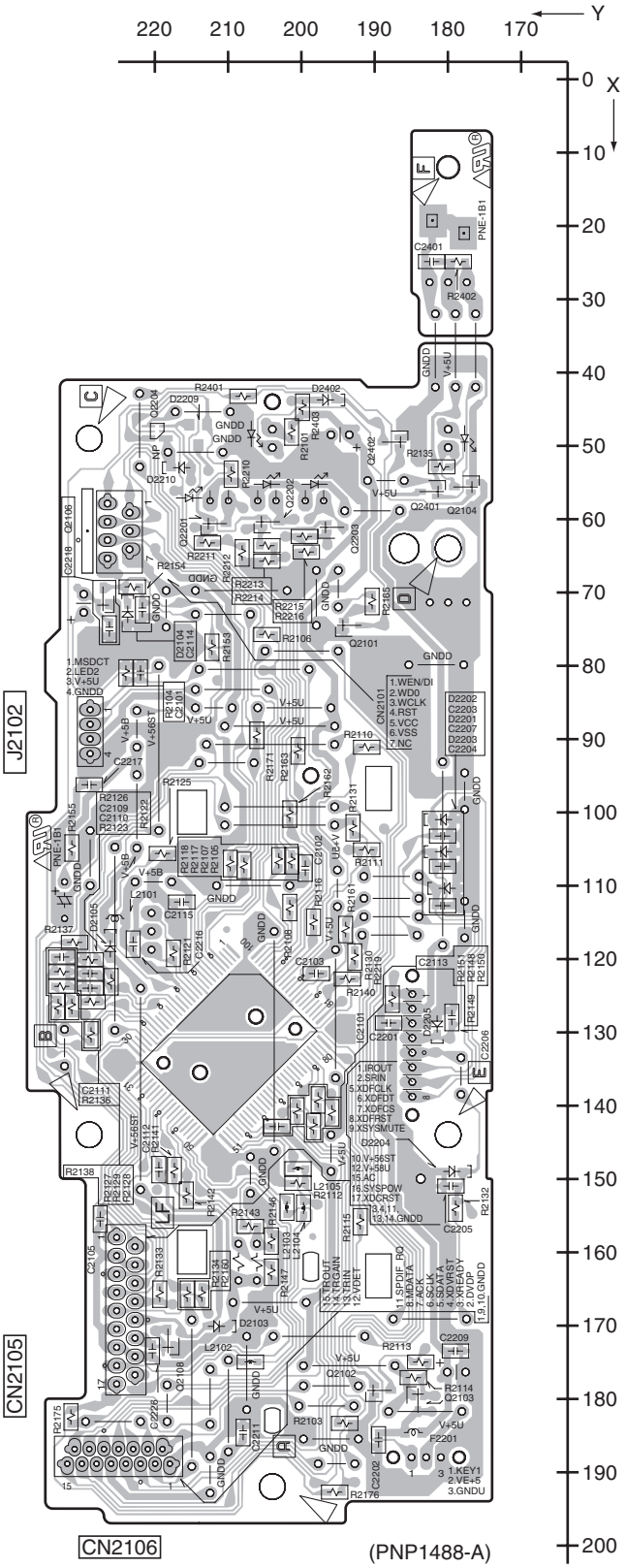
D LCD ASSY



SIDE B

SIDE B

D LCD ASSY

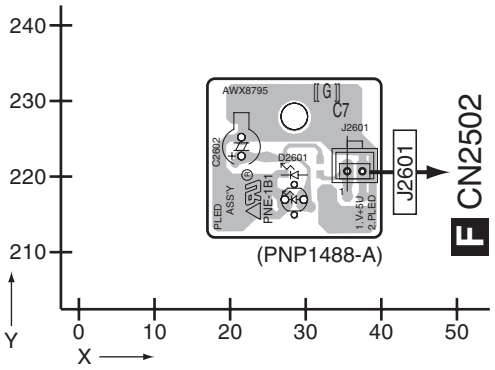


4.5 PLED, KEY and PRIMARY ASSYS

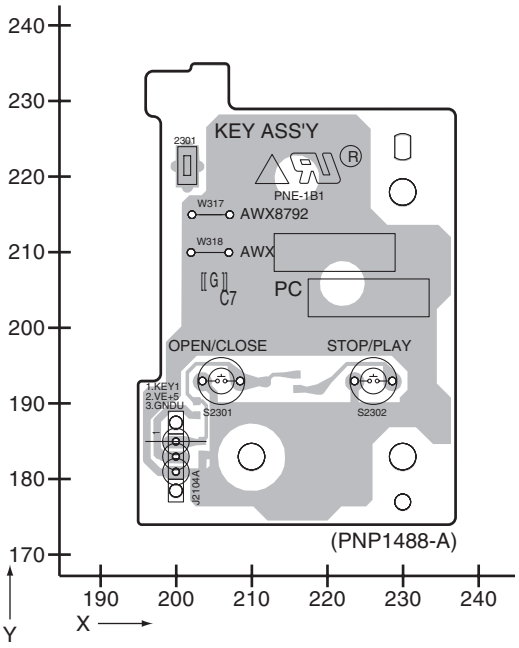
SIDE A

SIDE A

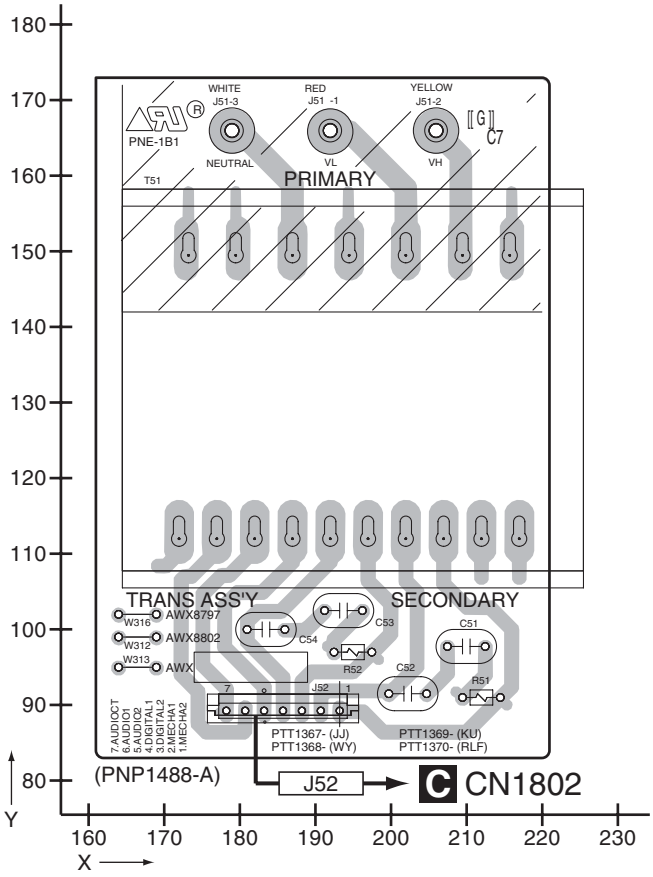
E PLED ASSY



G KEY ASSY



J PRIMARY ASSY

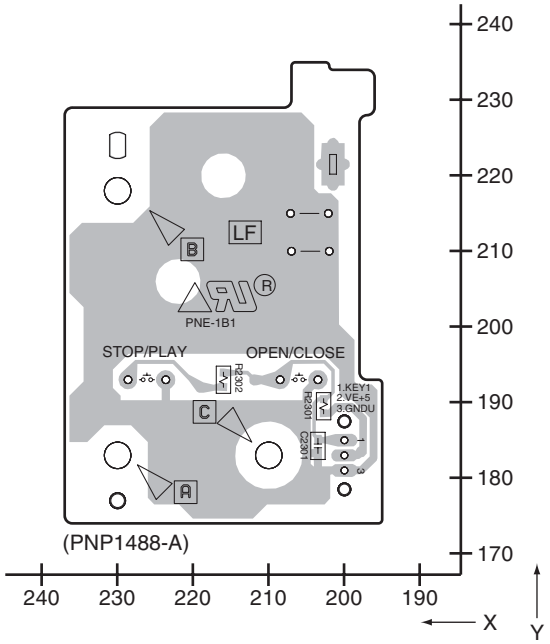


E G J

E G J

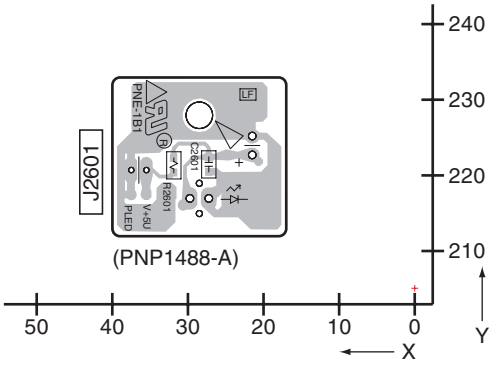
SIDE B

G KEY ASSY

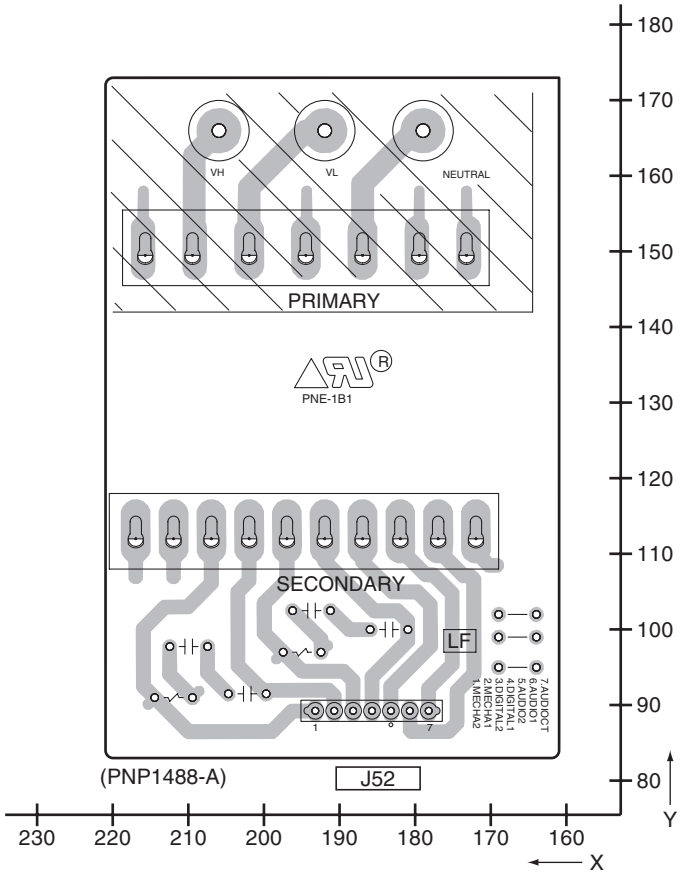


SIDE B

E PLED ASSY



J PRIMARY ASSY



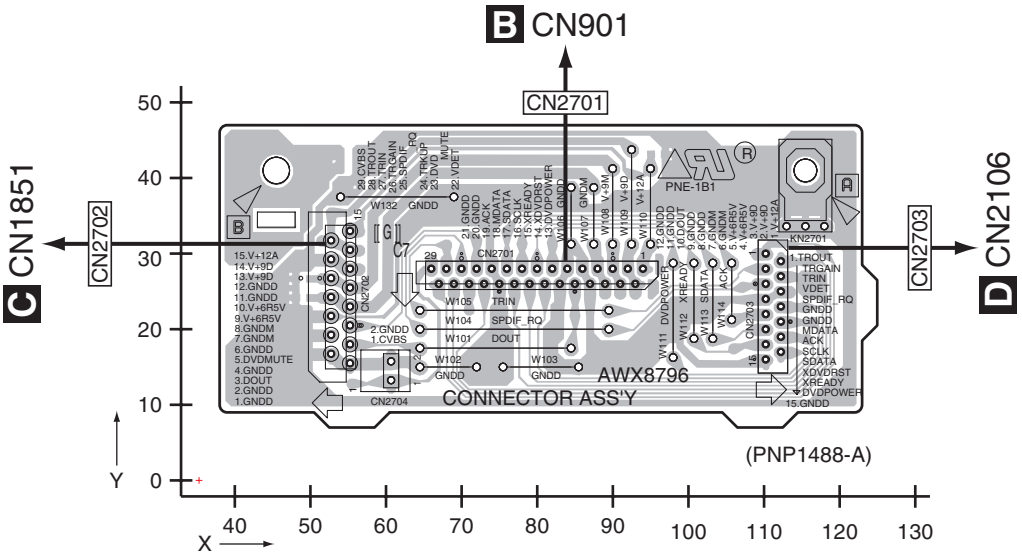
E G J

5 6 7 8

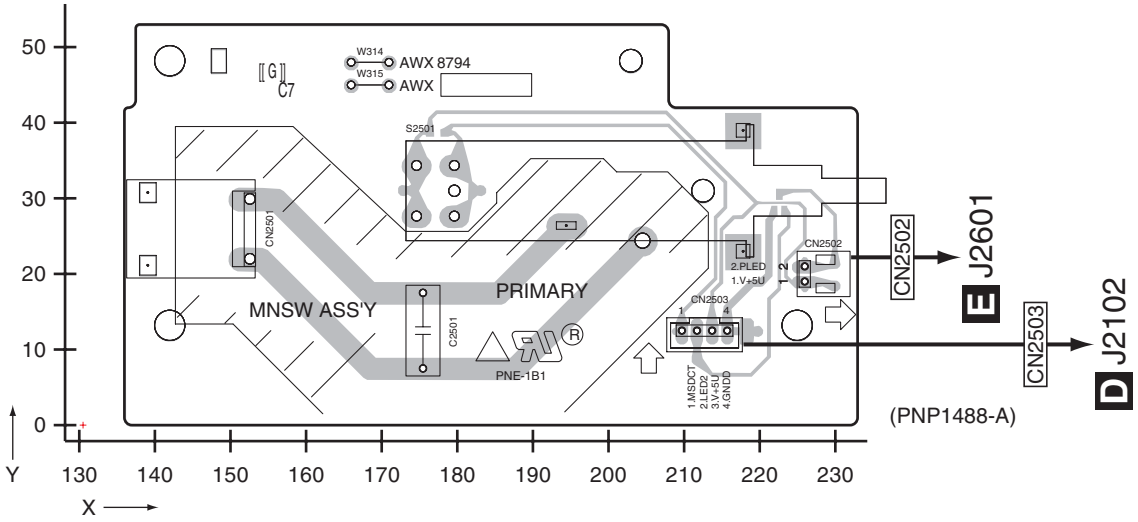
4.6 CONNECTOR and MNSW ASSYS

SIDE A **SIDE A**

H CONNECTOR ASSY



F MNSW ASSY

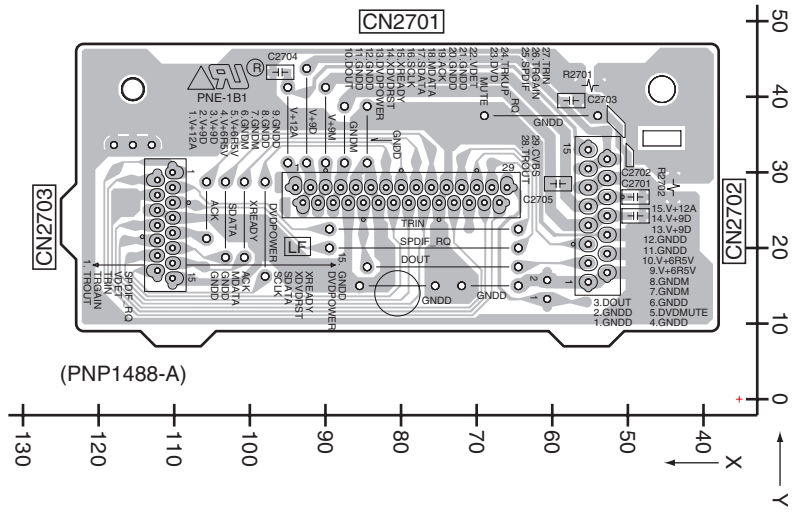


H F **H F**

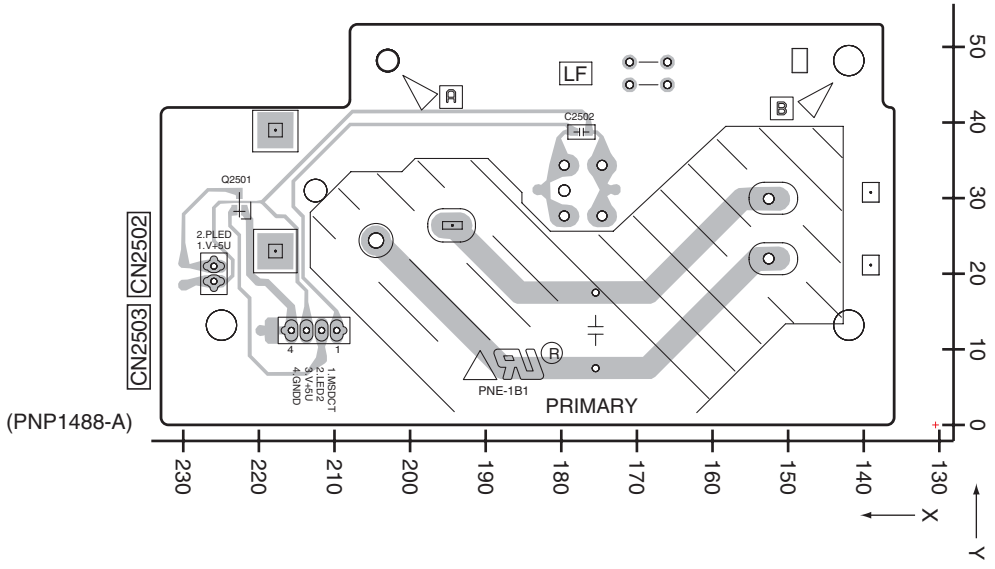
SIDE B

SIDE B

H CONNECTOR ASSY

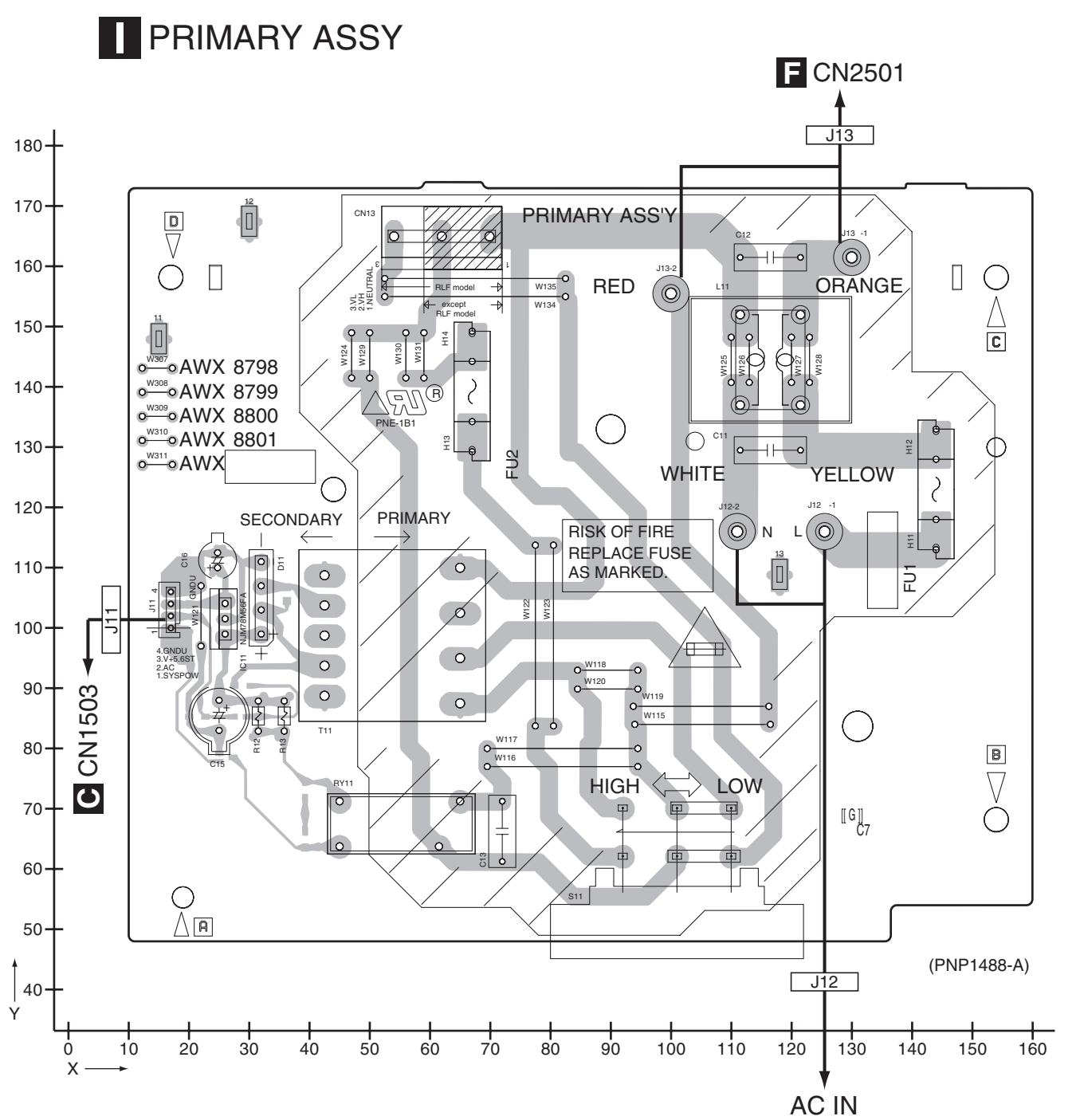


F MNSW ASSY



4.7 PRIMARY ASSY

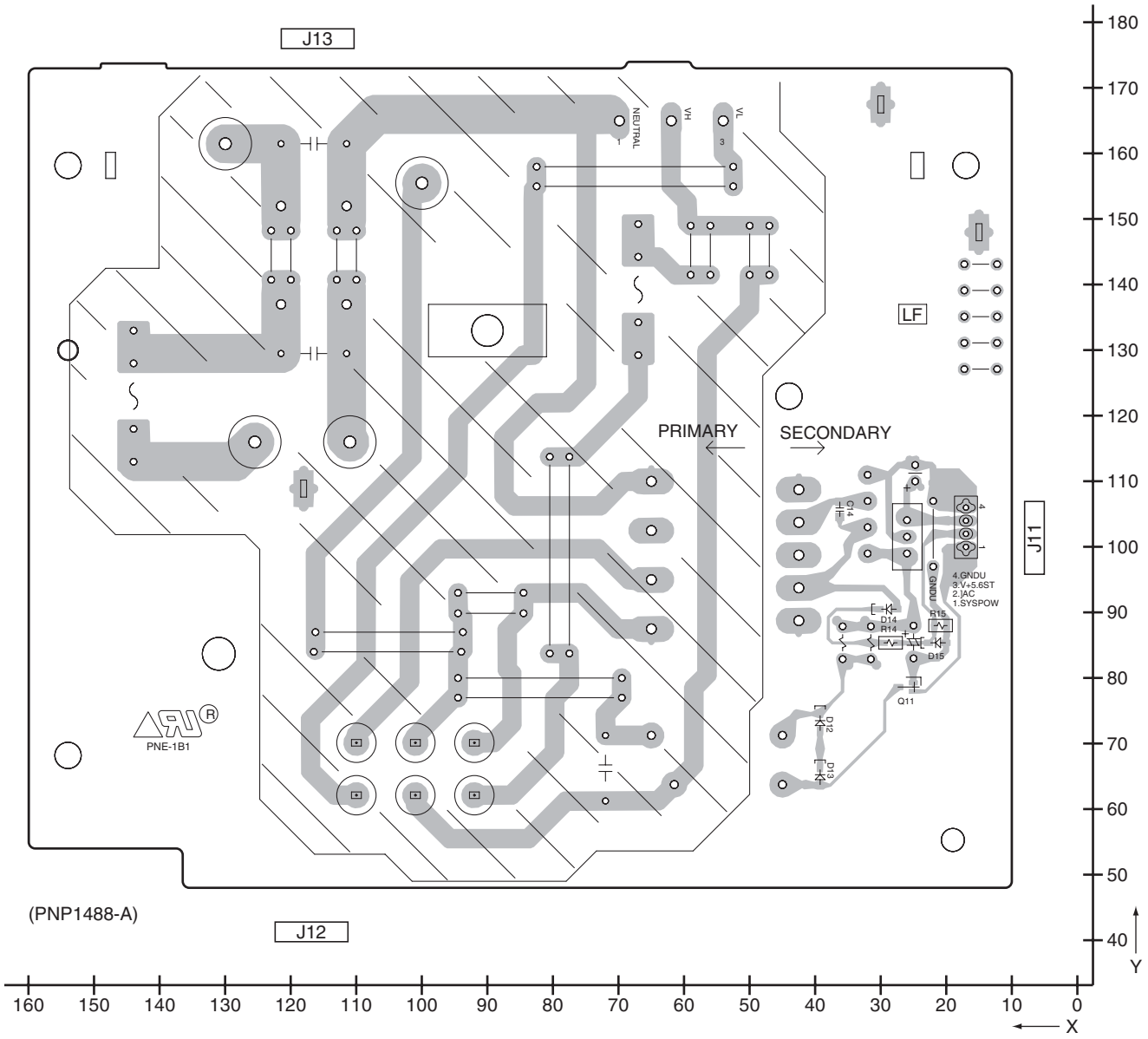
SIDE A **SIDE A**



SIDE B

SIDE B

PRIMARY ASSY



5. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10¹* → *561*	·····	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10³* → *473*	·····	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*	·····	*RN2H R 5 0 K*
1 Ω	→ *1R0*	·····	*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10¹* → *5621*	·····	*RN1/4PC 5 6 2 1 F*

- *Meaning of the figures and others in the parentheses in the parts list.*

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	PD-D6-J/ KUXJ/CA	PD-D6-J/ MYXJ5	PD-D6-S/ RLFPWXJ
NSP	1..LOADER ASSY	VWT1230	VWT1230	VWT1230
NSP	2..LOAB ASSY	VWG2346	VWG2346	VWG2346
	1..DVDM ASSY	AWM8069	AWM8069	AWM8069
	1..FLKB ASSY	AWM8072	AWM8071	AWM8073
	2..LCD ASSY	AWX8790	AWX8790	AWX8790
	2..KEY ASSY	AWX8792	AWX8792	AWX8792
	2..MNSW ASSY	AWX8794	AWX8794	AWX8794
	2..PLED ASSY	AWX8795	AWX8795	AWX8795
	2..CONNECTOR ASSY	AWX8796	AWX8796	AWX8796
	2..PRIMARY ASSY	AWX8800	AWX8799	AWX8801
	2..TRANS ASSY	AWX8802	AWX8802	AWX8797
	1..AJKB ASSY	AWM8075	AWM8075	AWM8075

I PRIMARY ASSY

AWX8800, AWX8799 and AWX8801 are constructed the same except for the following :

Mark	Symbol and Description	AWX8800	AWX8799	AWX8801
⚠	T11	ATT7079	ATT7078	ATT7080
⚠	S11 VOLTAGE SELECTOR	Not used	Not used	AKX1033
⚠	CN13 2P-VH CONNECTOR	B2P3-VH	B2P3-VH	Not used
⚠	CN13 3P-VH CONNECTOR	Not used	Not used	B3P5-VH
	H13, H14	Not used	Not used	AKR7001

J TRANS ASSY

AWX8802 and AWX8797 are constructed the same except for the following :

Mark	Symbol and Description	AWX8802	AWX8797
⚠	J51 2P CONNECTOR ASSY	PKP1018	Not used
⚠	J51 3P CONNECTOR ASSY	Not used	PKP1016

■ PCB PARTS LIST

Mark	No.	Description	Part No.
A		**LOAB ASSY**	
		MISCELLANEOUS	
	S 101		VSK1011
	CN602	CONNECTOR	S2B-PH-K
	CN601	CONNECTOR	S5B-PH-K

Mark	No.	Description	Part No.
B		**DVDM ASSY**	
		MISCELLANEOUS	
	IC 101	(A,62,106) 6CH DRIVER IC	BD7995EFS
	IC 201	(A,50,44) DVD IC	MT1389EE/B2-L
	IC 202	(B,34,25) IC	K4S641632K-UC75
	IC 203	(B,34,54) FLASH ROM	AYW7119
	IC 204	(A,19,44) EEPROM	S-24CS04AFJ

Mark	No.		Description	Part No.
	IC	205 (B,54,46)	IC	TC7SH08FUS1
⚠	IC	711 (A,33,74)	REGULATOR (1.8V)	MM1661JH
⚠	IC	731 (A,29,92)	DC/DC CONTROLLER IC	R1224N102H
⚠	IC	751 (A,32,113)	REGULATOR IC (5.0V)	MM1565AF
	Q	101 (B,55,113)	TRANSISTOR	2SA1576A
	Q	102 (B,60,116)	DIGITAL TRANSISTOR	DTC124EUA
	Q	304 (A,77,127)	TRANSISTOR	2SC4081
	Q	305 (A,84,125)	NMOS FET TRANSISTOR	UM5K1N
	Q	307 (A,71,87)	CHIP TRANSISTOR	HN1A01F
	Q	308 (A,63,87)	CHIP TRANSISTOR	HN1A01F
	Q	506 (A,114,69)	CHIP TRANSISTOR	DTC114YUA
	Q	701 (A,24,134)	TRANSISTOR	2SA1576A
	Q	702 (A,27,129)	DIGITAL TRANSISTOR	DTC124EUA
⚠	Q	732 (B,22,90)	FET	RSQ035P03
	Q	801 (A,50,87)	DIGITAL TRANSISTOR	DTC124EUA
	Q	821 (A,42,86)	TRANSISTOR	2SA1576A
	Q	851 (A,42,89)	TRANSISTOR	2SA1576A
	Q	881 (A,42,93)	TRANSISTOR	2SA1576A
	D	731 (A,29,87)	DIODE	1SS355
	D	732 (B,18,92)	DIODE	RSX201L-30
	D	733 (A,24,94)	DIODE	1SS355
	D	801 (A,50,85)	DIODE	UDZS4R7(B)
	D	821 (A,46,86)	DIODE	1SS355
	D	851 (A,46,89)	DIODE	1SS355
	D	852 (A,42,82)	DIODE	1SS355
	D	861 (A,46,82)	DIODE	1SS355
	D	862 (A,46,83)	DIODE	1SS355
	D	881 (A,46,93)	DIODE	1SS355
	L	731 (A,23,109)	POWER INDUCTOR(22U)	DTL1099
	L	732 (A,22,84)	POWER INDUCTOR	ATH7011
	L	751 (A,34,99)	INDUCTOR	CTF1395
	L	901 (B,44,129)	INDUCTOR	CTF1334
	L	931	INDUCTOR	CTF1384
	L	936	INDUCTOR	CTF1389
	L	937	INDUCTOR	CTF1389
	L	938	INDUCTOR	CTF1389
	L	939	INDUCTOR	CTF1389
	X	202 (B,76,48)	CRYSTAL OSCILLATOR	ASS7075
	CN101	(A,88,140)	CONNECTOR	CKS5045
	CN102	(A,69,142)	12P CONNECTOR	AKN7031
	CN103	(A,103,139)	04P CONNECTOR	RKN1045
	CN104	(A,79,9)	CONNECTOR	AKM1291
	CN901	(A,41,142)	29P CONNECTOR	VKN1321
	CN953	(A,116,102)	CONNECTOR	CKS3885

RESISTORS

	R	131 (A,61,95)		RS1/10S4R7J
	R	132 (A,63,95)		RS1/10S4R7J
	R	133 (A,66,95)		RS1/10S4R7J
	R	134 (A,65,95)		RS1/10S4R7J
	R	135 (A,68,95)		RS1/10S4R7J
	R	136 (A,70,95)		RS1/10S4R7J
	R	141 (B,54,110)		RS1/16S124J
	R	142 (B,58,114)		RS1/16S223J
	R	151 (A,59,117)		RS1/10S1R0J
	R	152 (A,59,121)		RS1/10S1R8J
	R	153 (A,57,117)		RS1/10S1R0J
	R	154 (A,57,121)		RS1/10S1R8J
	R	200 (A,25,56)		RS1/10S0R0J
	R	201 (A,49,67)		RS1/16S152J
	R	202 (A,48,67)		RS1/16S223J
	R	203		RS1/16S0R0J
	R	204 (A,47,67)		RS1/16S223J
	R	205 (A,45,67)		RS1/16S184J
	R	206 (A,46,64)		RS1/16S224J
	R	207 (A,65,60)		RS1/10S0R0J
	R	208 (B,27,71)		RS1/10S0R0J
	R	209 (A,57,16)		RS1/10S0R0J
	R	212 (A,40,70)		RS1/16S103J
	R	213 (A,41,70)		RS1/16S103J
	R	214 (A,45,72)		RS1/16S0R0J
	R	216 (A,36,62)		RS1/16S0R0J
	R	217 (A,31,61)		RS1/10S0R0J
	R	218 (A,18,37)		RS1/16S103J
	R	219 (A,18,35)		RS1/16S103J
	R	221 (A,25,44)		RS1/16S330J
	R	223 (A,29,35)		RS1/16S330J
	R	224 (A,29,49)		RS1/16S330J
	R	225 (A,40,23)	CHIP RESISTOR ARRAY	RAB4C330J
	R	226 (A,43,23)		RS1/16S330J
	R	227 (A,44,23)		RS1/16S330J
	R	229 (A,48,24)		RS1/16S330J
	R	230 (B,71,35)		RS1/16S101J
	R	231 (B,71,37)		RS1/16S101J
	R	232 (A,34,60)		RS1/16S0R0J
	R	233 (B,42,50)		RS1/16S0R0J
	R	234 (A,26,42)		RS1/16S330J
	R	235 (A,26,41)		RS1/16S472J
	R	237 (A,23,41)		RS1/16S330J
	R	238 (B,60,35)		RS1/16S103J
	R	241 (A,71,36)		RS1/16S330J
	R	242 (A,71,37)		RS1/16S330J
	R	243 (A,69,39)		RS1/16S100J
	R	244 (A,69,41)		RS1/16S330J
	R	246 (A,69,43)		RS1/16S330J
	R	247 (B,58,37)		RS1/16S103J
	R	248 (B,58,46)		RS1/16S330J
	R	249 (B,59,40)		RS1/16S103J
	R	250 (B,50,47)		RS1/16S0R0J
	R	254 (B,65,48)		RS1/16S754J
	R	255 (B,57,52)		RS1/16S104J
	R	256 (A,73,59)		RS1/16S153J
	R	257 (B,64,42)		RS1/16S0R0J
	R	258 (A,23,39)		RS1/16S330J
	R	259 (A,26,39)		RS1/16S330J
	R	260 (A,24,37)		RS1/16S330J
	R	261 (A,27,38)		RS1/16S330J
	R	266 (B,51,38)		RS1/16S330J
	R	267 (B,56,30)		RS1/16S0R0J
	R	268 (B,68,37)		RS1/16S101J
	R	269 (A,73,33)		RS1/16S102J
	R	270 (A,73,35)		RS1/16S101J
	R	271 (B,73,48)		RS1/16S101J
	R	272 (B,69,42)		RS1/16S330J
	R	273 (B,81,46)		RS1/16S0R0J
	R	279 (A,63,25)		RS1/16S5600F
	R	281 (B,19,33)		RS1/10S0R0J
	R	284 (A,34,61)		RS1/16S103J
	R	301 (B,89,136)		RS1/10S0R0J
	R	302 (B,86,136)		RS1/10S0R0J

Mark	No.	Description	Part No.
	R 303	(B,87,133)	RS1/10S0R0J
	R 313	(A,80,125)	RS1/16S104J
	R 314	(A,75,125)	RS1/16S103J
	R 315	(A,80,128)	RS1/16S103J
	R 318	(A,80,126)	RS1/16S104J
	R 321	(A,61,87)	RS1/16S4R7J
	R 322	(A,73,87)	RS1/16S4R7J
	R 325	(A,68,87)	RS1/16S4R7J
	R 326	(A,66,87)	RS1/16S4R7J
	R 406	(B,77,142)	RS1/16S750J
	R 412	(A,70,23)	RS1/16S750J
	R 517	(B,105,68)	RS1/16S102J
	R 520	(A,111,69)	RS1/16S102J
	R 590	(B,90,52)	RS1/10S0R0J
	R 591	(A,83,50)	RS1/16S0R0J
	R 592	(A,79,55)	RS1/16S100J
	R 595	(A,80,64)	RS1/16S0R0J
	R 701	(A,24,137)	RS1/16S473J
	R 702	(A,27,134)	RS1/16S103J
	R 732	(A,25,91)	RS1/10S100J
	R 733	(A,25,93)	RS1/16S220J
	R 734	(A,30,89)	RS1/16S473J
	R 735	(A,29,84)	RS1/16S272J
	R 736	(A,32,93)	RS1/16S1802F
	R 737	(A,31,83)	RS1/16S2702F
	R 738	(A,29,82)	RS1/16S1502F
	R 739	(A,19,78)	RS1/16S0R0J
	R 740	(A,29,85)	RS1/16S0R0J
	R 750	(A,30,99)	RS1/16S0R0J
	R 751	(A,33,119)	RS1/16S0R0J
	R 765	(B,39,108)	RS1/10S0R0J
	R 801	(A,54,85)	RS1/16S471J
	R 821	(A,42,83)	RS1/16S103J
	R 822	(A,39,86)	RS1/16S473J
	R 823	(A,36,86)	RS1/16S153J
	R 824	(A,37,86)	RS1/16S103J
	R 851	(A,39,89)	RS1/16S473J
	R 852	(A,36,89)	RS1/16S103J
	R 853	(A,37,89)	RS1/16S103J
	R 881	(A,39,93)	RS1/16S473J
	R 882	(A,36,93)	RS1/16S103J
	R 901	(A,39,128)	RS1/16S0R0J
	R 902	(B,40,131)	RS1/16S0R0J
	R 903	(A,43,128)	RS1/16S332J
	R 904	(A,41,128)	RS1/16S682J
	R 905	(A,44,128)	RS1/16S332J
	R 906	(A,42,126)	RS1/16S682J
	R 907	(A,46,128)	RS1/16S471J
	R 908	(B,21,40)	RS1/16S332J
	R 909	(B,23,38)	RS1/16S682J
	R 910	(A,48,128)	RS1/16S221J
	R 911	(A,50,128)	RS1/16S221J
	R 912	(A,53,128)	RS1/16S0R0J
	R 913	(A,55,128)	RS1/16S0R0J
	R 914	(A,56,128)	RS1/16S103J
	R 915	(A,57,128)	RS1/16S682J
	R 916	(B,47,128)	RS1/16S223J
	R 917	(B,44,125)	RS1/16S223J
	R 920	(B,52,135)	RS1/16S332J
	R 932	(A,104,97)	RS1/16S0R0J
	R 933	(A,104,99)	RS1/16S0R0J
	R 934	(A,104,101)	RS1/16S0R0J
	R 935	(A,104,103)	RS1/16S0R0J
	R 940	(A,104,111)	RS1/16S0R0J

CAPACITORS

C 101	(A,49,120)		CEVW101M16
C 102	(A,73,101)		CKSRYB105K10
C 103	(A,66,116)		CKSRYB105K10
C 104	(A,61,117)		CKSRYB105K10
C 121	(B,61,112)		CKSRYB105K10
C 131	(A,52,103)		CKSRYB104K25
C 132	(A,49,108)	CHIP PV CAPACITOR	VCH1252
C 140	(A,60,137)		CKSRYB105K10
C 144	(A,62,99)		CKSRYB222K50
C 145	(A,64,98)		CKSRYB222K50
C 146	(A,60,98)		CKSRYB222K50
C 151	(A,68,114)		CKSRYB103K50
C 152	(A,71,114)		CKSRYB103K50
C 153	(A,73,111)		CKSRYB103K50
C 161	(A,58,96)		CKSRYB102K50
C 201	(A,21,52)	CHIP ELECT.CAPACITOR	CEVW221M4
C 202	(A,69,64)	CHIP ELECT.CAPACITOR	CEVW221M4
C 203	(A,55,78)	CHIP ELECT.CAPACITOR	CEVW470M16
C 204	(A,52,63)		CKSRYB104K25
C 205	(B,52,69)		CKSRYB104K25
C 206	(A,47,77)	CHIP ELECT.CAPACITOR	CEVW470M16
C 207	(B,53,55)		CKSRYB104K25
C 208	(A,48,70)		CKSRYB222K50
C 209	(A,50,70)		CKSRYB104K25
C 210	(A,47,70)		CKSRYB222K50
C 211	(A,46,70)		CCSRCH560J50
C 212	(A,44,70)		CCSRCH560J50
C 213	(A,55,63)		CKSRYB104K25
C 214	(B,50,54)		CKSRYB104K25
C 215	(A,55,69)	CHIP ELECT.CAPACITOR	CEVW470M16
C 216	(A,46,62)		CKSRYB104K25
C 217	(A,42,62)		CKSRYB104K25
C 219	(A,36,61)		CKSRYB152K50
C 220	(A,31,58)		CKSRYB104K25
C 222	(A,29,53)		CKSRYB104K25
C 223	(A,29,51)		CKSRYB104K25
C 224	(A,25,45)		CKSRYB104K25
C 225	(B,34,39)		CKSRYB104K25
C 226	(B,40,39)		CKSRYB103K50
C 227	(B,36,40)		CCSRCH221J50
C 228	(B,39,37)		CKSRYB104K25
C 230	(B,37,35)		CKSRYB102K50
C 231	(B,42,35)		CKSRYB104K25
C 232	(B,46,36)		CKSRYB104K25
C 233	(B,49,33)		CKSRYB104K25
C 234	(B,52,33)		CKSRYB104K25
C 235	(B,55,35)		CKSRYB104K25
C 236	(B,56,33)		CKSRYB104K25
C 237	(A,65,16)	CHIP ELECT.CAPACITOR	CEVW221M4
C 239	(B,60,34)		CKSRYB104K25
C 240	(B,59,39)		CKSRYB104K25
C 241	(B,61,43)		CKSRYB104K25
C 243	(A,61,25)		CKSRYB105K10

Mark No.	Description	Part No.
C 244	(A,60,25)	CKSRYB104K25
C 245	(B,61,31)	CKSRYB104K25
C 246	(B,63,32)	CKSRYB104K25
C 249	(B,54,44)	CKSRYB104K25
C 250	(B,64,36)	CKSRYB103K50
C 253	(B,64,44)	CKSRYB104K25
C 254	(B,64,48)	CCSRCH391J50
C 255	(B,65,53)	CKSRYB474K10
C 256	(B,72,52)	CEVW100M16
C 257	(B,60,49)	CKSRYB104K25
C 258	(A,69,49)	CKSRYB473K50
C 259	(A,72,50)	CKSRYB473K50
C 260	(B,60,50)	CKSRYB104K25
C 261	(B,67,53)	CKSRYB105K10
C 262	(A,73,52)	CKSRYB104K25
C 263	(A,70,51)	CKSRYB105K10
C 264	(B,68,53)	CKSRYB104K25
C 265	(A,73,53)	CCSRCH220J50
C 266	(B,60,52)	CKSRYB104K25
C 267	(A,70,53)	CKSRYB102K50
C 268	(A,73,56)	CKSRYB104K25
C 269	(A,72,56)	CKSRYB333K16
C 271	(A,70,57)	CKSRYB104K25
C 272	(A,70,58)	CKSRYB104K25
C 273	(A,69,60)	CKSRYB104K25
C 281	(B,18,27) CHIP ELECT.CAPACITOR	CEVW221M4
C 282	(B,22,31)	CKSRYB105K10
C 283	(B,46,33)	CKSRYB104K25
C 284	(B,33,17)	CKSRYB104K25
C 285	(B,27,17)	CKSRYB104K25
C 286	(B,27,33)	CKSRYB104K25
C 287	(B,31,33)	CKSRYB104K25
C 288	(B,34,33)	CKSRYB104K25
C 289	(B,34,40)	CKSRYB105K10
C 290	(A,20,39)	CKSRYB104K25
C 296	(B,34,42)	CKSRYB102K50
C 298	(B,80,48)	CKSRYB105K10
C 299	(B,79,48)	CKSRYB102K50
C 309	(A,71,77) CHIP TZV CAPACITOR	VCH1260
C 310	(A,63,77) CHIP TZV CAPACITOR	VCH1260
C 343	(A,64,64)	CKSRYB105K10
C 344	(A,60,64)	CKSRYB105K10
C 345	(A,62,64)	CKSRYB105K10
C 346	(A,63,64)	CKSRYB105K10
C 347	(A,59,64)	CKSRYB105K10
C 371	(A,94,134)	CKSRYB104K25
C 372	(B,94,134)	CKSRYB104K25
C 373	(A,99,127) CHIP TZV CAPACITOR	VCH1260
C 374	(A,106,127) CHIP TZV CAPACITOR	VCH1260
C 701	(A,24,131)	CKSQYB105K16
C 711	(A,28,73)	CKSRYB105K10
C 712	(A,35,78)	CCSRCH471J50
C 713	(A,29,66)	CKSQYB225K10
C 732	(A,22,113) CHIP CERAMIC C.	DCH1165
C 733	(A,20,105) CHIP CERAMIC C.	DCH1165
C 734	(A,21,100)	CEVW101M16
C 735	(A,20,95) CHIP CERAMIC C.	DCH1165
C 736	(A,25,89)	CKSRYB104K25
C 737	(A,28,82)	CCSRCH121J50
C 738	(A,24,78) CHIP CERAMIC C.	DCH1165
C 739	(A,21,66)	CEVW101M16
C 751	(A,32,119)	CKSRYB105K10
C 752	(A,34,108)	CCSRCH471J50
C 753	(A,30,108)	CKSQYB225K10
C 761	(A,41,103)	CEVW101M16
C 801	(A,50,83)	CKSRYB104K25
C 1011	CERAMIC CAPACITOR	CKSQYB104K16

C AJKB ASSY

MISCELLANEOUS

IC 1101	(A,144,58) OP-AMP IC	NJM5532MD
IC 1102	(A,156,72) OP-AMP IC	NJM5532MD
IC 1201	(A,169,58) OP-AMP IC	NJM5532MD
IC 1301	(A,142,39) D/A CONVERTER IC	PCM1738EG-3
IC 1401	(A,171,39) D/A CONVERTER IC	PCM1738EG-3
IC 1501	(A,97,24) AQE IC	PD0274A
IC 1502	(A,56,44) IC	TC74VHC125FTS1
IC 1601	(A,110,30) IC	TC74VHC157FTS1
IC 1602	(A,123,28) IC	TC74VHC157FTS1
IC 1651	(A,187,70) IC	TC74VHC08FTS1
IC 1701	(A,196,84) IC	TC74VHCU04FT
⚠IC 1804	(A,115,60) IC	NJM78M05FA
⚠IC 1831	(A,86,54) REGULATOR IC	BD7802FP
⚠IC 1832	(A,71,44) REGURATOR (ADJ.)	BA3948FP
⚠IC 1833	(A,43,29) REGURATOR IC	BA00BC0WCP-V5
⚠IC 1851	(A,29,80) PROTECTOR(3A)	AEK7015
⚠IC 1852	(A,36,74) PROTECTOR(4A)	AEK7018
Q 1101	(A,154,100) TRANSISTOR	2SD2114K
Q 1201	(A,161,100) TRANSISTOR	2SD2114K
Q 1651	(A,172,89) CHIP TRANSISTOR	UMH9N
Q 1652	(A,174,94) TRANSISTOR	2SA1576A
Q 1801	(A,91,71) N-FET	2SK246
Q 1802	(B,108,81) CHIP TRANSISTOR	2SC3906K
⚠Q 1803	(A,108,72) TRANSISTOR	2SD1763A
Q 1804	(A,96,105) N-FET	2SK246
Q 1805	(B,105,94) CHIP TRANSISTOR	2SA1514K
⚠Q 1806	(A,113,104) TRANSISTOR	2SB1186A
D 1651	(A,171,98) DIODE	DAP202U
D 1652	(B,176,90) DIODE	DAN202U
D 1751	(B,48,108) DIODE	1SS355
⚠D 1801	(A,65,98) SCHOTTKY DIODE	11EQS10
⚠D 1802	(A,65,90) SCHOTTKY DIODE	11EQS10
⚠D 1803	(A,60,114) SCHOTTKY DIODE	11EQS10
⚠D 1804	(A,60,106) SCHOTTKY DIODE	11EQS10
D 1805	(B,94,81) DIODE	UDZS12(B)
D 1806	(B,94,95) DIODE	UDZS12(B)
D 1807	(B,116,77) CHIP DIODE	RB501V-40
D 1808	(B,118,106) CHIP DIODE	RB501V-40
D 1809	(B,131,68) CHIP DIODE	RB501V-40
D 1831	(A,79,54) CHIP DIODE	RB501V-40
D 1832	(A,72,56) CHIP DIODE	RB501V-40
D 1833	(B,50,28) CHIP DIODE	RB501V-40
⚠D 1851	(A,49,84) BRIDGE DIODE	S1VB20/F03
⚠D 1852	(A,41,64) DIODE	D3SBA20(B)
L 1701	(A,203,90) COIL	VTL1172
L 1702	(A,191,94) COIL	PTL1017
F 1301	(A,152,20) INDUCTOR	CTF1661
F 1302	(A,130,50) INDUCTOR	CTF1661
F 1401	(A,181,20) INDUCTOR	CTF1661

Mark	No.	Description	Part No.
	F 1402(A,134,50)	INDUCTOR	CTF1661
	F 1701(B,197,102)	CHIP MAGNET CORE	DTF1068
	F 1702(B,199,100)	INDUCTOR	CTF1661
	JA 1101(A,143,118)	1P PIN JACK	PKB1041
	JA 1201(A,163,118)	1P PIN JACK	PKB1042
	JA 1701(A,198,118)	JACK	VKB1097
	JA 1702(A,179,118)	OPT. LINK OUT	VKS1002
	JA 1751(A,33,116)	JACK	RKN1004
	JA 1752(A,43,116)	JACK	RKN1004
	KN1901(A,23,22)	WRAPPING TERMINAL	VNF1084
	KN1902(A,220,18)	WRAPPING TERMINAL	VNF1084
	KN1903(A,220,88)	WRAPPING TERMINAL	VNF1084
	KN1904(A,19,101)	WRAPPING TERMINAL	VNF1084
	KN1905(A,64,29)	WRAPPING TERMINAL	VNF1084
	CN1501(A,82,39)	17P CONNECTOR	VKN1248
	CN1502(A,23,27)	CONNECTOR	CKS3382
	CN1503(A,23,59)	CONNECTOR	B4B-PH
	CN1851(A,218,48)	CONNECTOR	CKS3380
		SCREW	BBZ30P080FCC
		SCREW	PMH30P080FCC
		HEAT SINK	PNS1043

RESISTORS

	R 1103(A,148,68)		RN1/16SE1201D
	R 1104(A,144,73)		RN1/16SE1201D
	R 1105(A,148,70)		RN1/16SE1201D
	R 1106(A,148,71)	CHIP METAL FILM R	RN1/16SE1801D
	R 1107(A,148,73)	CHIP METAL FILM R	RN1/16SE1801D
	R 1108(A,148,74)		RN1/16SE1201D
	R 1109(B,154,95)		RS1/16S223J
	R 1110(A,168,101)		RS1/16S102J
	R 1111(B,154,97)		RS1/16S751J
	R 1112(B,154,102)		RS1/16S221J
	R 1114(A,152,62)	CARBON FILM RESISTOR	PCN1041
	R 1115(A,135,62)	CARBON FILM RESISTOR	PCN1041
	R 1203(A,168,73)		RN1/16SE1201D
	R 1204(A,164,68)		RN1/16SE1201D
	R 1205(A,164,70)		RN1/16SE1201D
	R 1206(A,164,71)	CHIP METAL FILM R	RN1/16SE1801D
	R 1207(A,164,73)	CHIP METAL FILM R	RN1/16SE1801D
	R 1208(A,164,74)		RN1/16SE1201D
	R 1209(B,158,95)		RS1/16S223J
	R 1210(A,168,99)		RS1/16S102J
	R 1211(B,158,97)		RS1/16S751J
	R 1212(B,161,102)		RS1/16S221J
	R 1214(A,177,62)	CARBON FILM RESISTOR	PCN1041
	R 1215(A,160,62)	CARBON FILM RESISTOR	PCN1041
	R 1301(A,138,29)		RS1/16S220J
	R 1302(A,140,29)		RS1/16S470J
	R 1303(B,136,44)		RN1/16SE1602D
	R 1401(A,167,29)		RS1/16S220J
	R 1402(A,169,30)		RS1/16S470J
	R 1403(B,170,42)		RN1/16SE1602D
	R 1501(A,104,44)		RS1/10S4R7J
	R 1502(A,89,24)		RS1/16S220J
	R 1503(A,101,31)		RS1/16S220J
	R 1504(A,98,31)		RS1/16S220J
	R 1505(A,102,28)		RS1/16S220J
	R 1507(B,90,36)		RS1/16S680J
	R 1508(B,90,34)		RS1/16S680J
	R 1509(B,90,31)		RS1/16S680J
	R 1510(B,90,29)		RS1/16S680J
	R 1511(B,87,24)		RS1/16S100J
	R 1512(B,83,18)		RS1/16S100J
	R 1513(B,83,20)		RS1/16S100J
	R 1515(B,88,41)		RS1/16S680J
	R 1516(A,29,32)		RS1/16S220J
	R 1517(A,29,33)		RS1/16S220J
	R 1551(A,91,29)		RS1/16S220J
	R 1552(A,95,31)		RS1/16S220J
	R 1553(A,94,31)		RS1/16S220J
	R 1560(A,125,22)		RS1/16S220J
	R 1602(A,109,23)		RS1/16S560J
	R 1604(A,114,25)		RS1/16S560J
	R 1605(A,112,23)		RS1/16S220J
	R 1606(A,108,37)		RS1/16S220J
	R 1607(A,109,37)		RS1/16S100J
	R 1609(A,111,37)		RS1/16S101J
	R 1610(A,112,37)		RS1/16S100J
	R 1612(A,114,35)		RS1/16S560J
	R 1614(A,122,21)		RS1/16S560J
	R 1616(A,128,22)		RS1/16S560J
	R 1617(A,120,35)		RS1/16S220J
	R 1618(A,122,35)		RS1/16S100J
	R 1620(A,123,35)		RS1/16S101J
	R 1621(A,125,35)		RS1/16S100J
	R 1623(A,127,31)		RS1/16S560J
	R 1651(A,169,83)		RS1/10S0R0J
	R 1652(A,175,91)		RS1/10S332J
	R 1653(B,170,84)		RS1/16S472J
	R 1654(B,180,89)		RS1/16S102J
	R 1655(A,171,92)		RS1/16S103J
	R 1656(B,180,91)		RS1/16S102J
	R 1661(A,163,31)		RS1/16S332J
	R 1662(A,162,33)		RS1/16S682J
	R 1701(A,193,75)		RS1/10S0R0J
	R 1702(A,199,78)		RS1/16S0R0J
	R 1703(A,202,83)		RS1/16S0R0J
	R 1704(A,203,85)		RS1/16S220J
	R 1705(A,191,88)		RS1/16S470J
	R 1706(B,192,90)		RS1/16S750J
	R 1751		RS1/16S0R0J
	R 1752		RS1/16S0R0J
	R 1801(A,48,95)	CARBON FILM RESISTOR	RD1/4MUF4R7J
	R 1802(B,111,75)		RS1/16S681J
	R 1803(B,101,83)		RS1/16S331J
	R 1804(B,116,106)		RS1/16S681J
	R 1805(B,101,92)		RS1/16S331J
	R 1806(A,130,103)	METAL OXIDE RESISTOR	RS2LMF331J
	R 1807(A,136,103)	METAL OXIDE RESISTOR	RS2LMF331J
	R 1808(B,24,93)		RS1/10S0R0J
	R 1809(B,26,93)		RS1/10S0R0J
	R 1810(B,32,90)		RS1/10S0R0J
	R 1811(B,34,90)		RS1/10S0R0J
	R 1835(A,73,51)		RS1/16S102J
	R 1836(A,67,51)		RS1/16S3302F
	R 1837(A,69,52)		RS1/16S1203F
	R 1839(B,46,33)		RS1/16S102J
	R 1840(B,42,20)		RS1/16S3902F

Mark No.	Description	Part No.
R 1841(B,46,18)		RS1/16S334J
R 1842(B,46,20)		RS1/16S334J

CAPACITORS

C 1104(A,150,57)		CCSRCH152J50
C 1105(A,137,58)		CCSRCH152J50
C 1106(A,143,54)		CKSRYB104K16
C 1107(A,137,65)		CEAT101M16
C 1108(A,146,62)		CKSRYB104K16
C 1109(A,146,65)		CEAT101M16
C 1110(A,146,72)		CCSRCH122J50
C 1111(A,150,70)		CCSRCH471J50
C 1112(A,150,73)		CCSRCH471J50
C 1113(A,150,90)		VCH1255
C 1115(A,159,76)		CKSRYB104K16
C 1116(A,163,79)		CEAT101M16
C 1117(A,155,68)		CKSRYB104K16
C 1118(A,154,79)		CEAT101M16
C 1204(A,175,57)		CCSRCH152J50
C 1205(A,162,58)		CCSRCH152J50
C 1206(A,168,54)		CKSRYB104K16
C 1207(A,162,65)		CEAT101M16
C 1208(A,171,62)		CKSRYB104K16
C 1209(A,171,65)		CEAT101M16
C 1210(A,166,72)		CCSRCH122J50
C 1211(A,162,70)		CCSRCH471J50
C 1212(A,162,73)		CCSRCH471J50
C 1213(A,163,90)		VCH1255
C 1301(A,152,31)	ELECT. CAPACITOR	CEAT471M6R3
C 1302(A,142,31)		CKSRYF105Z10
C 1303(A,135,35)		CKSRYB104K16
C 1305(A,133,46)	OS CAPACITOR	ACH7203
C 1307(A,139,49)	ELECT. CAPACITOR	VCH1249
C 1308(A,150,45)	ELECT. CAPACITOR	VCH1249
C 1309(B,144,38)		CCSRCH471J50
C 1310(A,148,34)		CKSRYB103K50
C 1401(A,181,31)	ELECT. CAPACITOR	CEAT471M6R3
C 1402(A,171,31)		CKSRYF105Z10
C 1403(A,164,35)		CKSRYB104K16
C 1405(A,162,45)	OS CAPACITOR	ACH7203
C 1407(A,168,49)	ELECT. CAPACITOR	VCH1249
C 1408(A,180,45)	ELECT. CAPACITOR	VCH1249
C 1409(B,168,38)		CCSRCH471J50
C 1410(A,177,34)		CKSRYB103K50
C 1501(A,104,38)	ELECT. CAPACITOR	VCH1248
C 1502(A,91,26)		CKSRYB104K16
C 1503(A,91,23)		CKSRYF105Z10
C 1504(A,102,24)		CKSRYF105Z10
C 1505(A,60,42)		CKSRYB104K16
C 1506(A,91,18)		CKSRYB103K50
C 1511(B,16,39)		CKSRYB104K16
C 1601(A,106,33)		CKSRYF105Z10
C 1602(A,107,43)		CEAT470M35
C 1603(A,119,30)		CKSRYF105Z10
C 1605(A,120,43)		CEAT470M35
C 1652(A,190,68)		CKSRYB104K16
C 1704(A,193,80)		CKSRYB104K16
C 1705(A,190,80)	ELECT. CAPACITOR	VCH1248
C 1706(B,178,105)		CKSRYF105Z10
C 1707(B,178,107)		CCSRCH102J50
C 1708(A,183,99)		CEAT470M35
C 1709(B,205,88)		CKSRYB103K50
C 1710(A,208,86)		CEAT470M35
C 1717(B,197,109)		CKSRYB102K50
C 1751(B,39,109)		CKSRYF105Z10
C 1752(B,37,109)		CKSRYB103K50
C 1753(B,50,111)		CKSRYB104K16
C 1801(A,54,90)	AUDIO FILM CAPACITOR	ACE7063
C 1802(A,43,90)	AUDIO FILM CAPACITOR	ACE7063
C 1803(A,80,72)		PCH1156
C 1804(A,80,95)		PCH1156
C 1805(A,96,81)		CEAT101M16
C 1806(A,91,95)		CEAT101M16
C 1807(A,132,81)		CEAT101M25
C 1808(A,139,85)		CEAT101M25
C 1809(B,116,64)		CKSRYB104K16
C 1811(A,131,64)		CKSRYF105Z10
C 1813(A,128,71)	ELECT. CAPACITOR	CEHAZL102M16
C 1831(A,81,61)		CKSQYF105Z25
C 1832(A,82,46)		CEAT471M16
C 1834(A,74,53)		CKSQYF105Z25
C 1835(A,64,56)		CEAT101M16
C 1837(B,46,35)		CKSQYF105Z25
C 1838(A,45,14)		CEAT101M16
C 1852(A,61,81)	ELECT. CAPACITOR	CEAT332M25
C 1854(A,53,64)	ELECT. CAPACITOR	CEAT472M25
C 1901(B,118,56)		CKSRYB104K16

D LCD ASSY

MISCELLANEOUS

IC 2101(B,132,210)	CPU	PDC148A
Q 2101(B,75,193)	TRANSISTOR	RT1N241M
Q 2102(B,179,189)	TRANSISTOR	RT1N241M
Q 2103(B,181,184)	TRANSISTOR	2SA1577
Q 2104(B,56,178)	TRANSISTOR	RT1N241M
Q 2106(B,71,227)	DIGITAL TR(SC-70)	RT1N431M
Q 2108(B,172,218)	TRANSISTOR	2SC4097
Q 2201(B,61,212)	TRANSISTOR	2SC4081
Q 2202(B,60,204)	TRANSISTOR	2SC4081
Q 2203(B,61,196)	TRANSISTOR	2SC4081
Q 2204(B,48,220)	TRANSISTOR	UMH1N
Q 2401(B,56,183)	DIGITAL TR(SC-70)	RT1P241M
Q 2402(B,50,188)	DIGITAL TR(SC-70)	RT1N431M
D 2101(A,50,204)	LED(RED)	SLI-343URCW(RST)
D 2102(A,50,180)	LED(RED)	SLR-343VC(NPQ)
D 2103(B,170,212)	DIODE	1SS355
D 2105(B,119,226)	DIODE	1SS355
D 2206(A,58,210)	LED(WHITE)	NSPW510BS-2224
D 2207(A,58,204)	LED(WHITE)	NSPW510BS-2224
D 2208(A,58,197)	LED(WHITE)	NSPW510BS-2224
D 2209(B,49,214)	DIODE	DAN217
D 2210(B,53,217)	DIODE	1SS355
D 2402(B,44,197)	DIODE	1SS355
L 2101(B,115,226)	INDUCTOR	LCYA220J2520
L 2102(B,175,207)	INDUCTOR	CTF1389
L 2103(B,154,202)	INDUCTOR	CTF1389
L 2104(B,154,200)	INDUCTOR	CTF1389
L 2105(B,149,201)	INDUCTOR	CTF1389

Mark	No.	Description	Part No.
	F	2201(B,185,185) INDUCTOR	CTF1661
	J	2102(A,86,229) CONNECTOR ASS'Y	PF04PG-C12
A	J	2104(A,188,185) JUMPER WIRE	D20PYY0320E
	KN	2101(A,71,178) WRAPPING TERMINAL	VNF1084
	V	2201(A,125,185) LCD MODULE	AAV7111
	X	2101(A,119,221) CERAMIC RESONATOR	ASS7034
	CN	2101(A,58,227) CONNECTOR 7P	52492-0720
	CN	2105(A,158,225) CONNECTOR	9607S-17F
	CN	2106(A,189,218) CONNECTOR	CKS3829
		LCD COVER R(PLS)	XMR3094
		3P CABLE HOLDER	51048-0300
		8P CABLE HOLDER	51048-0800
		LCD LT COND. (PLS)	XAK3494
B		LCD HOLDER (PLS)	XMR3092
		LCD COVER L(PLS)	XMR3093
		DIFFUSSION SHEET	XAK3521
		2401(A,21,180) REMOTE RECEIVER UNIT	GP1UM28XK0VF

RESISTORS

	R	2101(B,48,201)	RS1/16S102J
	R	2103(B,183,194)	RS1/16S473J
	R	2104(B,81,224)	RS1/16S104J
	R	2105(B,107,201)	RS1/16S103J
	R	2106(B,76,205)	RS1/16S221J
C	R	2107(B,107,203)	RS1/16S221J
	R	2108(B,113,202)	RS1/16S221J
	R	2110(B,91,191)	RS1/16S221J
	R	2111(B,105,191)	RS1/16S221J
	R	2112(B,151,201)	RS1/16S473J
	R	2113(B,175,184)	RS1/16S102J
	R	2114(B,177,185)	RS1/16S223J
	R	2115(B,156,192)	RS1/16S221J
	R	2116(B,115,198)	RS1/16S221J
	R	2117(B,107,208)	RS1/16S221J
	R	2118(B,107,210)	RS1/16S221J
D	R	2121(B,119,218)	RS1/16S105J
	R	2122(B,123,226)	RS1/16S221J
	R	2123(B,126,229)	RS1/16S221J
	R	2125(B,106,219)	RS1/16S473J
	R	2126(B,120,229)	RS1/16S105J
	R	2127(B,127,233)	RS1/16S221J
	R	2128(B,130,229)	RS1/16S221J
	R	2129(B,127,231)	RS1/16S221J
	R	2130(B,120,193)	RS1/16S221J
	R	2131(B,102,193)	RS1/16S221J
E	R	2132(B,154,179)	RS1/16S221J
	R	2133(B,166,219)	RS1/16S221J
	R	2134(B,166,216)	RS1/16S221J
	R	2135(B,53,181)	RS1/16S271J
	R	2136(B,122,233)	RS1/16S473J
	R	2137(B,118,231)	RS1/16S473J
	R	2138(B,124,233)	RS1/16S473J
	R	2140(B,123,194)	RS1/16S221J
	R	2141(B,149,217)	RS1/16S221J
	R	2142(B,152,216)	RS1/16S221J
	R	2143(B,157,207)	RS1/16S221J
F	R	2146(B,159,204)	RS1/16S103J
	R	2147(B,163,204)	RS1/16S103J
	R	2148(B,139,198)	RS1/16S221J
	R	2149(B,143,198)	RS1/16S221J
	R	2150(B,141,196)	RS1/16S221J
	R	2151(B,141,201)	RS1/16S221J
	R	2153(B,78,212)	RS1/16S473J
	R	2154(B,69,223)	RS1/16S222J
	R	2155(B,105,231)	RS1/16S101J
	R	2160(B,166,214)	RS1/16S221J
	R	2161(B,116,194)	RS1/16S221J
	R	2162(B,100,202)	RS1/16S221J
	R	2163(B,92,201)	RS1/16S221J
	R	2165(B,71,190)	RS1/16S221J
	R	2171(B,90,206)	RS1/16S473J
	R	2175(B,183,232)	RS1/16S0R0J
	R	2210(B,54,210)	RS1/16S102J
	R	2211(B,63,213)	RS1/16S620J
	R	2212(B,65,208)	RS1/16S0R0J
	R	2213(B,64,205)	RS1/16S620J
	R	2214(B,66,205)	RS1/16S0R0J
	R	2215(B,62,200)	RS1/16S620J
	R	2216(B,65,199)	RS1/16S0R0J
	R	2219(B,126,188)	RS1/16S182J
	R	2401(B,43,208)	RS1/16S471J
	R	2403(B,45,200)	RS1/16S223J

CAPACITORS

	C	2101(B,81,222)	CKSRYB102K50
	C	2103(B,122,198)	CKSRYB104K16
	C	2109(B,122,229)	CKSRYB103K50
	C	2110(B,124,229)	CKSRYB103K50
	C	2112(B,149,220)	CKSRYB104K16
	C	2113(B,143,203)	CKSRYB104K16
	C	2114(B,72,222)	CKSRYB103K50
	C	2115(B,112,216)	CKSRYB104K16
	C	2201(B,129,188)	CKSRYB104K16
	C	2203(B,103,181)	CKSRYB104K16
	C	2204(B,113,181)	CCSRCH220J50
	C	2205(B,151,180)	CCSRCH220J50
	C	2206(B,128,180)	CCSRCH220J50
	C	2207(B,107,181)	CCSRCH220J50
	C	2209(B,174,179)	CKSRYB104K16
	C	2210(A,176,180)	CEAL101M10
	C	2216(B,118,223)	CKSRYB104K16
	C	2217(B,96,229)	CKSRYB104K16
	C	2219(A,73,230)	CEAT100M50
	C	2220(A,110,232)	ACH1246
	C	2226(B,174,220)	CKSRYF105Z10
	C	2401(B,25,182)	CKSRYB104K16
	C	2402(A,49,194) ELECT. CAPACITOR	CEAT470M35

E PLED ASSY

MISCELLANEOUS

	D	2601(A,27,217) LED(BLUE)	SLR343BC4T

RESISTORS

	R	2601(B,32,221)	RS1/16S271J

CAPACITORS

	C	2602(A,22,223)	CEJQ470M16

Mark	No.	Description	Part No.
		F MNSW ASSY	
		MISCELLANEOUS	
	Q 2501	(B,223,30) TRANSISTOR	RT1N241M
⚠	S 2501	(A,219,31) POWER SWITCH	VSA1005
⚠	CN2501	(A,153,22) AMP U-P CONNECTOR	VKN2024
	CN2502	(A,226,19) CONNECTOR	S2B-PH
	CN2503	(A,210,13) CONNECTOR	B4B-PH
		G KEY ASSY	
		MISCELLANEOUS	
	S 2301	(A,204,193) SWITCH	VSG1024
	S 2302	(A,224,193) SWITCH	VSG1024
	2301	(A,202,222) PCB BINDER	VEF1040
		3P CABLE HOLDER	51048-0300
		RESISTORS	
	R 2301	(B,203,190)	RS1/16S103J
	R 2302	(B,216,193)	RS1/16S103J
		H CONECTOR ASSY	
		MISCELLANEOUS	
	KN2701	(A,113,34) WRAPPING TERMINAL	VNF1084
	CN2701	(A,94,28) CONNECTOR	VKN1205
	CN2702	(A,55,16) CONNECTOR	CKS3380
	CN2703	(A,110,30) CONNECTOR	VKN1191
	CN2704	(A,61,13) CONNECTOR	B2P-SHF-1AA
		CAPACITORS	
	C 2701	(B,49,24)	CKSRYB104K16
		I PRIMARY ASSY (KUXJ/CA type)	
		MISCELLANEOUS	
⚠	IC 11	(A,26,99) REGULATOR IC	NJM78M56FA
	Q 11	(B,26,79) TRANSISTOR	RT1N241M
⚠	D 11	(A,32,99) BRIDGE DIODE	S1VB20/F03
	D 12	(B,39,73) DIODE	1SS355
	D 13	(B,39,65) DIODE	1SS355
	D 14	(B,29,91) DIODE	1SS355
	D 15	(B,21,85) DIODE	UDZS5R1(B)
⚠	L 11	(A,122,137) LINE FILTER	XTF3004
	H 11	(A,144,113) FUSE CLIP	AKR7001
	H 12	(A,144,133) FUSE CLIP	AKR7001
	J 11	(A,17,100) CONNECTOR ASSY	PF04PG-C07
⚠	J 12	(A,126,116) AC INLET ASSY	PKP1014
⚠	J 13	(A,130,162) 2P CONECTOR ASSY	PKP1015
⚠	RY11	(A,65,71) JOE LOWPOWER RELAY	ASR7013
⚠	T 11	(A,65,110) POWER TRANSFORMER	ATT7079
⚠	CN13	(A,70,165) CONNECTOR	B2P3-VH
	13	(A,118,109) PCB BINDER	VEF1040
	11	(A,15,148) PCB BINDER	VEF1040
	12	(A,30,168) PCB BINDER	VEF1040
		RESISTORS	
	R 12	(A,32,88) CARBON FILM RESISTOR	RD1/4MUF220J
	R 14	(B,29,85)	RS1/16S332J
	R 15	(B,21,88)	RS1/16S103J
		CAPACITORS	
⚠	C 12	(A,122,162) FILM CAPACITOR	ACE7013
	C 15	(A,25,88) ELECT. CAPACITOR	CEAT102M25
	C 16	(A,25,110)	CEAT221M16
		J TRANS ASSY (KUXJ/CA type)	
		MISCELLANEOUS	
⚠	J 51	(A,192,166) 2P CONECTOR ASSY	PKP1018
	J 52	(A,193,89) 7P CONNECTOR ASSY	PKP1017
		RESISTORS	
	R 51	(A,210,91) CARBON FILM RESISTOR	RD1/4MUF4R7J
	R 52	(A,193,97) CARBON FILM RESISTOR	RD1/4MUF4R7J
		CAPACITORS	
	C 51	(A,213,98) AUDIO FILM CAPACITOR	ACE7060
	C 52	(A,205,92) AUDIO FILM CAPACITOR	ACE7060
	C 53	(A,196,103)	CFTLA824J50
	C 54	(A,186,100)	CFTLA824J50

6. ADJUSTMENT

6.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

[Mechanism Part]

❶ Tangential and Radial Height Coarse Adjustment

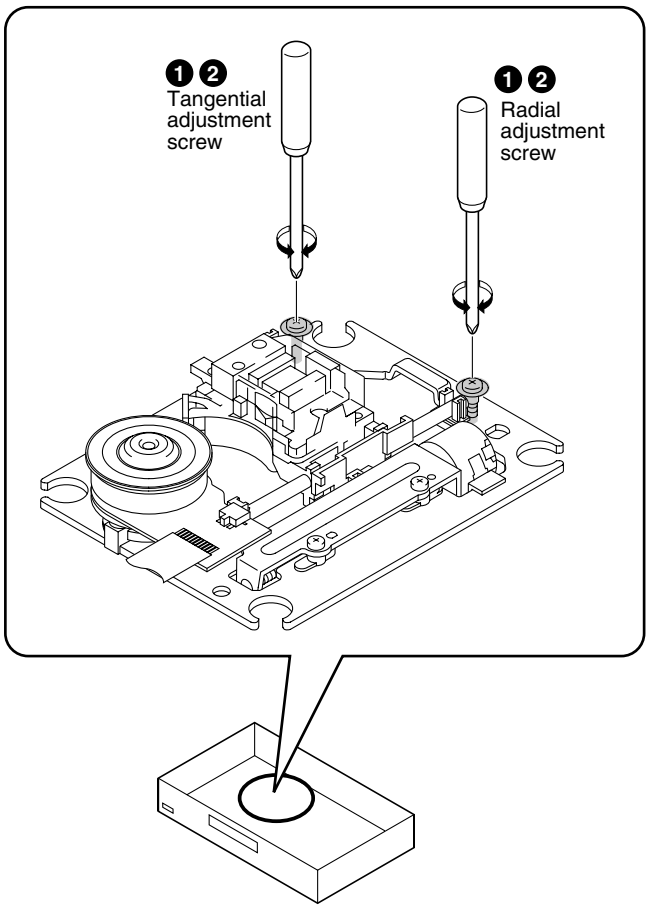
❷ DVD (CD) Error Rate Adjustment

[Electrical Part]

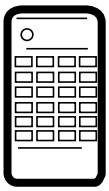
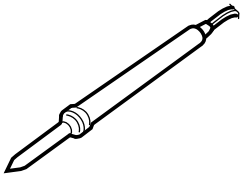
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



6.2 JIGS AND MEASURING INSTRUMENTS

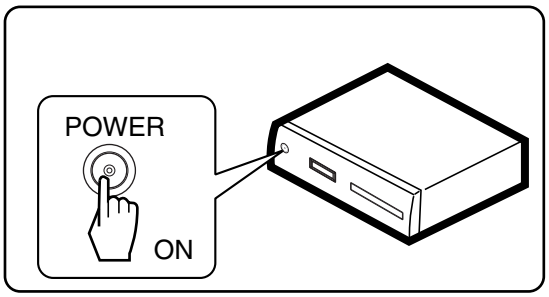
⊕ Screwdriver (large)	⊕ Screwdriver (medium)	 Test mode remote control unit (GGF1381)	
⊕ Precise screwdriver	DVD test disc (GGV1025)	 Soldering iron	Screw tight (GYL1001)

6.3 NECESSARY ADJUSTMENT POINTS

When	Adjustment Points	
■ Exchange Parts of Mechanism		
Exchange the 05SD Pickup Assy	Mechanical point	❶, ❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
Exchange the Traverse Mechanism Assy-S	Mechanical point	———
	Electric point	———
Exchange the Spindle Motor	Mechanical point	❷ ＊ After adjustment, screw locks with the Screw tight.
	Electric point	———
■ Exchange PCB Assy		
Exchange PC Board LOAB and DVDM ASSYS	Mechanical point	———
	Electric point	———

6.4 TEST MODE

POWER ON



How to display the error rate

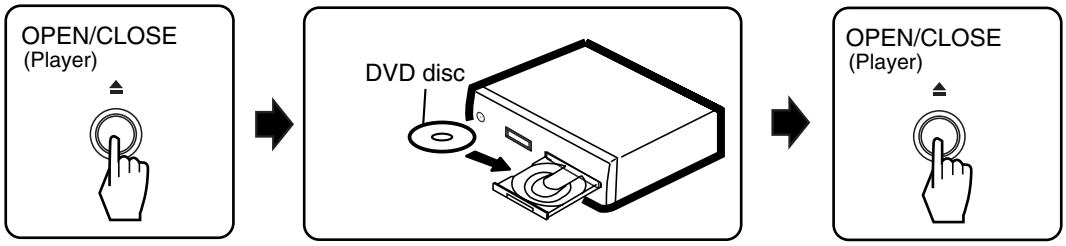
■ **Power-on in DVD mode**

With the AC power off, turn the AC power on by pulling up Pin 44 of IC2101 with 5 V (by short-circuiting JP2101). (See next page.)

Note: When the unit is turned on in DVD mode, "-DVD-" is indicated on the LCD.

DISC SET

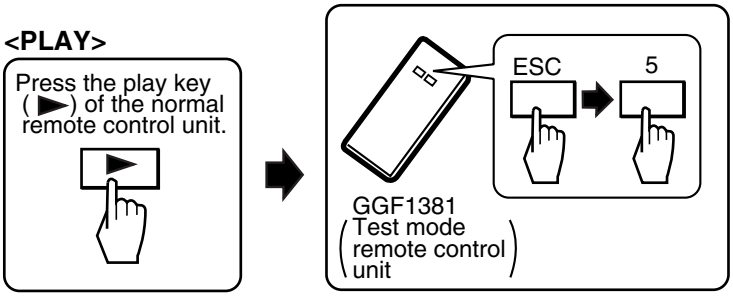
<TRAY OPEN>

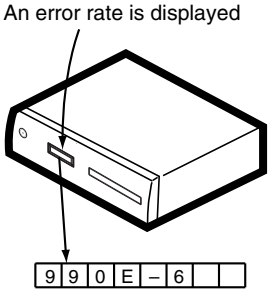


<TRAY CLOSE>

TEST MODE: PLAY

<PLAY>



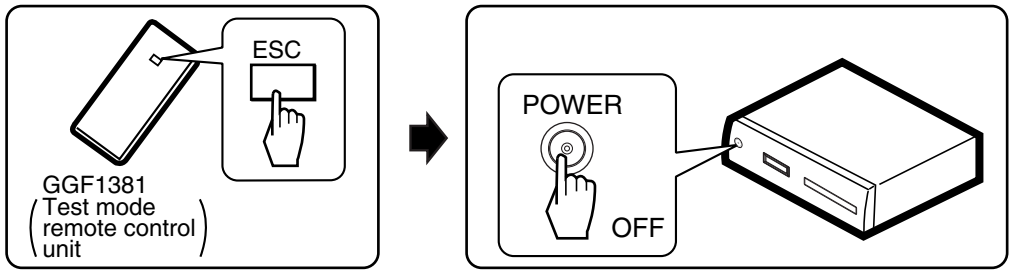


The error rate is displayed as above.
But this means " 9.90E – 6 ".

Notes:
- The audio signal are outputted during the test mode.
- The SKIP key and the SCAN key are effective during the test mode.

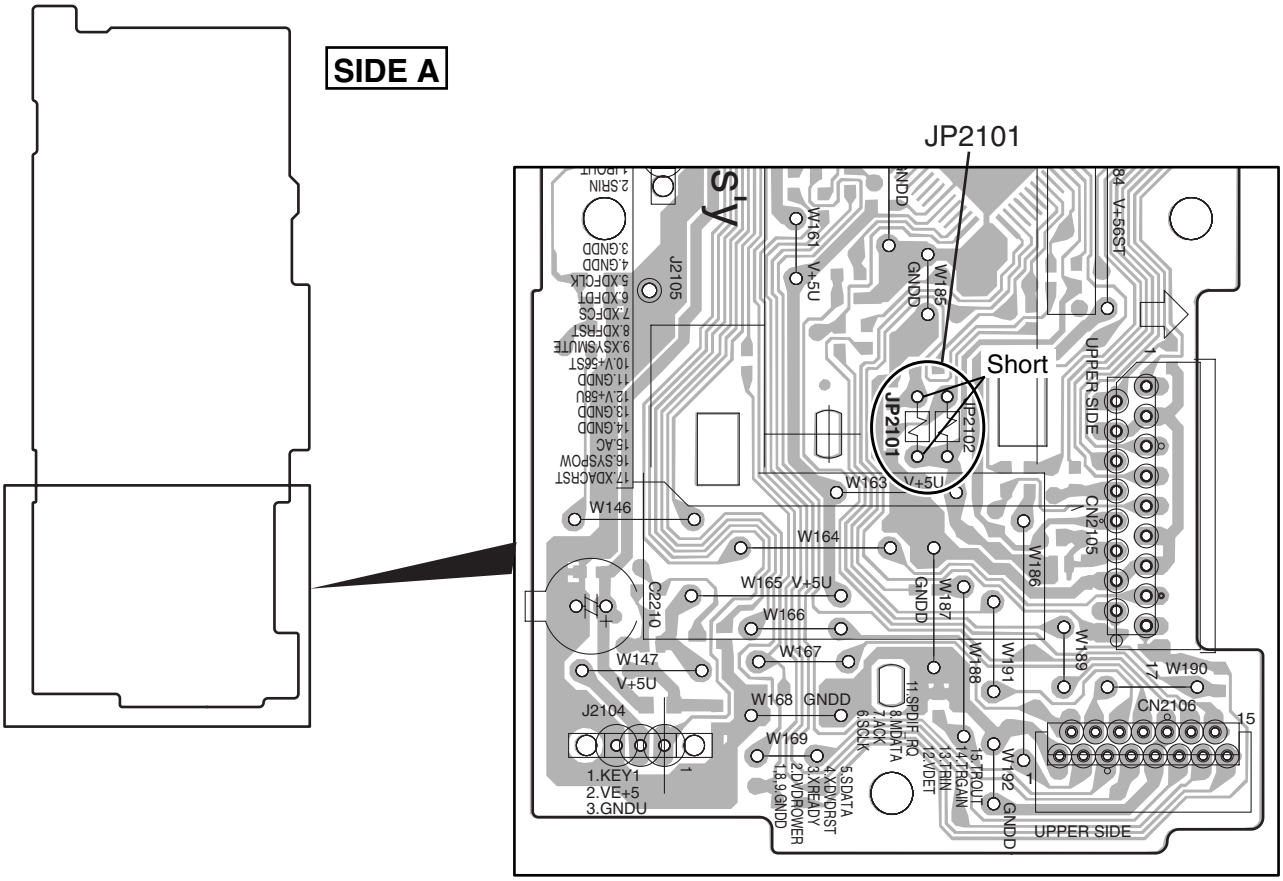
Note:
Even if you intend to continuously use the unit after displaying the error rate, be sure to turn the power off then back on

TEST MODE: OFF



■ Service Test mode connecting point

D LCD ASSY



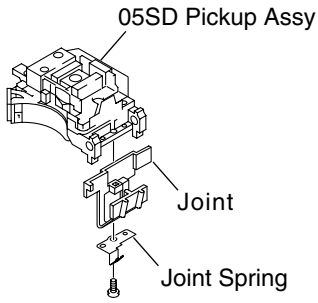
6.5 MECHANISM ADJUSTMENT

1 Tangential and Radial Height Coarse Adjustment

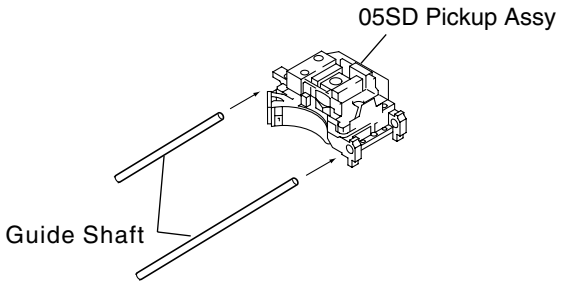
START

- Remove the 05SD Pickup Assy from the Traverse Mechanism Assy-S.
- Remove the joint and the joint spring of the 05SD Pickup Assy.

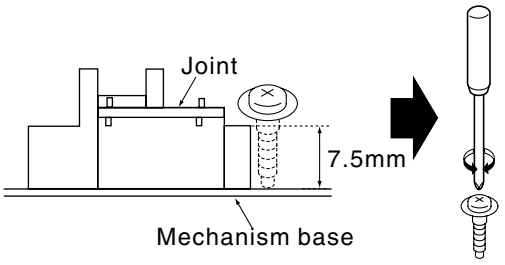
Note:
Before removing the flexible cable for the pickup, soldering of the pickup circuit is necessary.
For details, see "7.1.5 DISASSEMBLY".



- Pass through the guide shaft to a new 05SD Pickup Assy.
- Attach it to the Traverse Mechanism Assy-S.



- Put the joint between the Tangential (or Radial) adjustment screw and the mechanism base and turn each screw to adjust the height.
(Refer to "6.1 ADJUSTMENT ITEMS AND LOCATION".)



- Attach the Traverse Mechanism Assy-S to the 05 LOADER Assy.
- Turn it over and attach the joint and the joint spring.
- Arrange the flexible cables.
(Refer to "7.1.5 DISASSEMBLY".)

2 DVD Error Rate Adjustment

Notes:
• Use disc: GGV1025

START

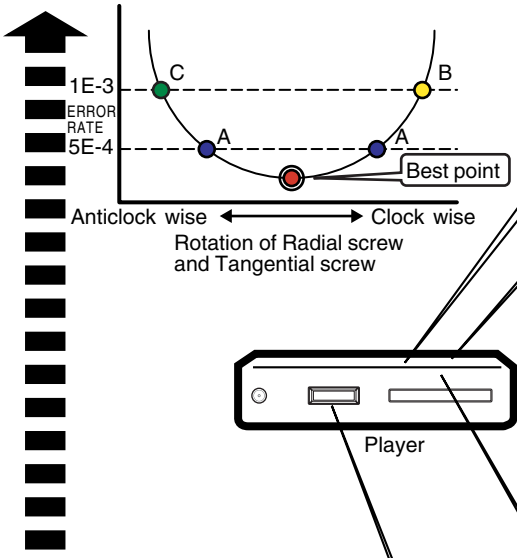
• Play the DVD test disc at inner track
• Display ERROR RATE on the **LCD display**

ESC 5

9 9 0 E – 6

The error rate is displayed as above.
But this means " 9.90E – 6 ".

Traverse Mechanism Assy-S
Adjust the radial adjustment screw so that ERROR RATE becomes around "**5E-4**". A



Player

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight.
Screw tight: GYL1001

NG

OK

CHECK
In this check, the error rate that is less than "**5E-5**"is better.

Disc playback normally.
• The measurement of block error rate

ESC 5

ESC
Service mode end

• Unfasten the tangential screw by 90 degrees step till ERROR RATE becomes around "**1E-3**" again . C
• Record the number of rotation (N1).
• Fasten the tangential adjustment screw till the number of rotation becomes harf of N1. Best tangential point

Traverse Mechanism Assy-S
Fasten the tangential adjustment screw so that ERROR RATE becomes around "**1E-3**". B

➡ Service mode
ESC 5

• Play the DVD test disc at outer track (around #200000) ➡ (Play title 22)
* At stop mode, press 2, 2, then ENTER key of the set remote control.

ESC
Service mode end

• Unfasten the radial adjustment screw by 90 degrees step till ERROR RATE becomes around "**1E-3**" again . C
• Record the number of rotation (N1).
(memorizing how much the screw was rotated.)
• Fasten the radial adjustment screw till the number of rotation becomes harf of N1. Best Radial point

Traverse Mechanism Assy-S
Fasten the radial adjustment screw so that ERROR RATE becomes around "**1E-3**". B

• Play the DVD test disc at inner track (around #30000) ➡(Play title1)
* At stop mode, press 1, then ENTER key of the set remote control.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

■ The Version Display Mode Functional Specification

● **Mechanical control computer**

How to display the version of the mechanical control computer

① **Power-on in DVD mode**

With the AC power off, turn the AC power on by pulling up Pin 44 of IC2101 with 5 V (by short-circuiting JP2101).

Note: When the unit is turned on in DVD mode, "-DVD-" is indicated on the LCD.

② **Displaying the version of the mechanical control computer**

Press the [ESC] then the [CHAP] key on the remote control unit for DVD Test mode to indicate the version of the mechanical control computer.

Ex. | 7 | 1 | 5 | 3 | 1 | – | 0 | 6 |

(1) (2)

(1) : This means that the part number is " AYW7153 ".

(2) : This means that the version is " 1.06 ".

③ **Canceling version display**

- Press the [ESC] key on the remote control unit.
- Press the [POWER] button to turn the unit off.

Note: Even if you intend to continuously use the unit after displaying the error rate, be sure to turn the power off then back on again.

● **System control computer**

Displaying the version of the system control computer

① **Displaying the version of the system control computer**

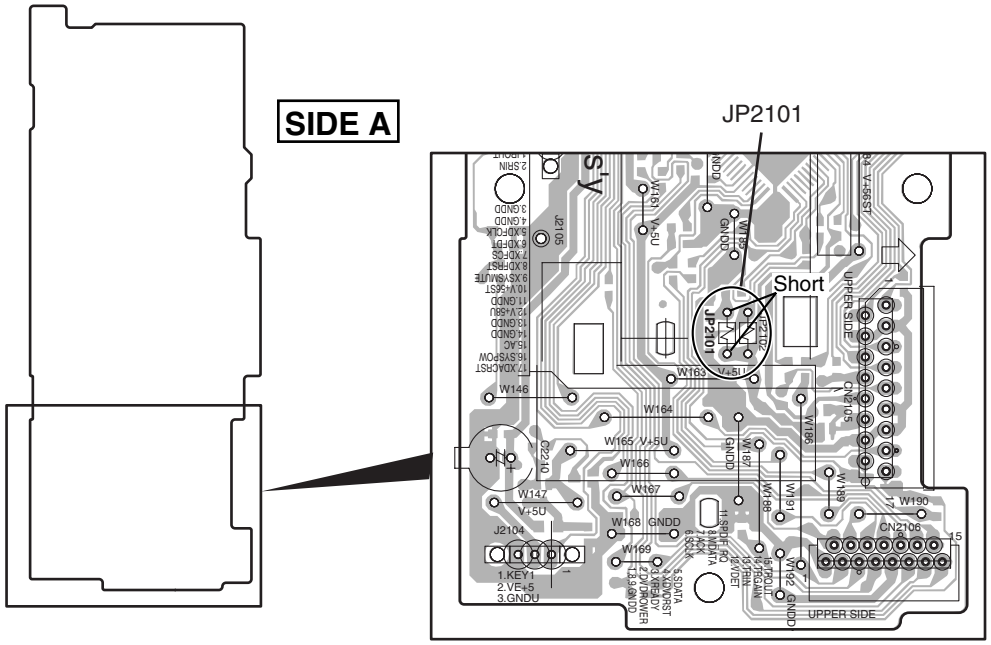
With the unit on, press and hold the [►/■] key on the main unit for 8 seconds. The version (part number) of the system control computer will be displayed.

Ex. | P | D | C | 1 | 4 | 8 | A | |

② **Canceling version display**

The version display will automatically disappear after a while.

D LCD ASSY



7.1.2 METHOD FOR DIAGNOSING DEGRADATION OF THE LDS ON THE PICKUP ASSY

Case when this diagnosis is required :
When playback of any disc, including a test disc (DVD: GGV1025, CD: STD-905), won't play or doesn't play

How to diagnose

In the case mentioned above, degradation of the laser diodes (LDs) mounted on the 05SD Pickup Assy is suspected. Measure the voltage between the two ends of one of the resistors mentioned below.

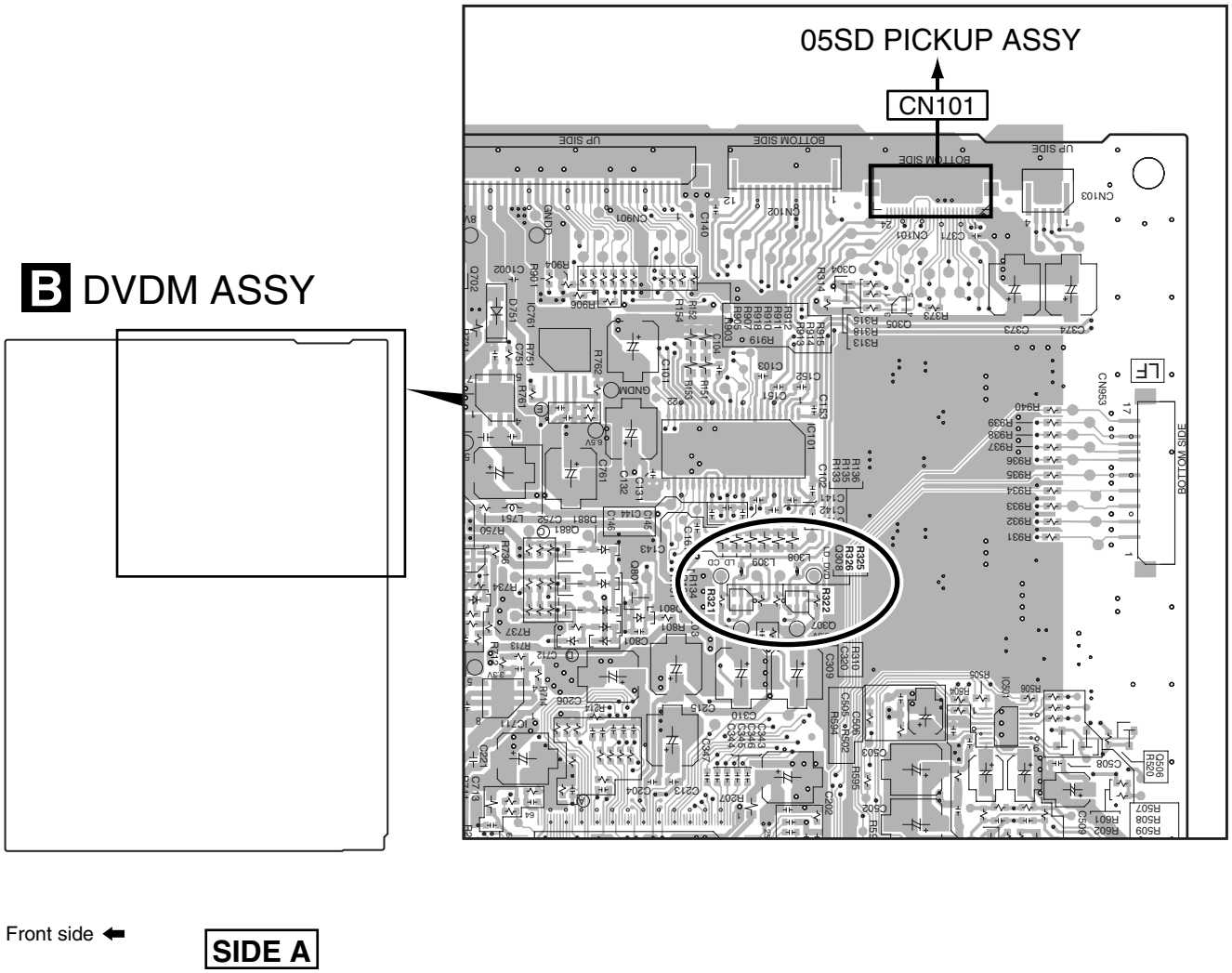
- **No playback of a CD :**

  Measure the voltage between the both ends of R321 or R326 on the DVDM Assy. If the voltage is 0.4 V or higher, the 780-nm LD is degraded.

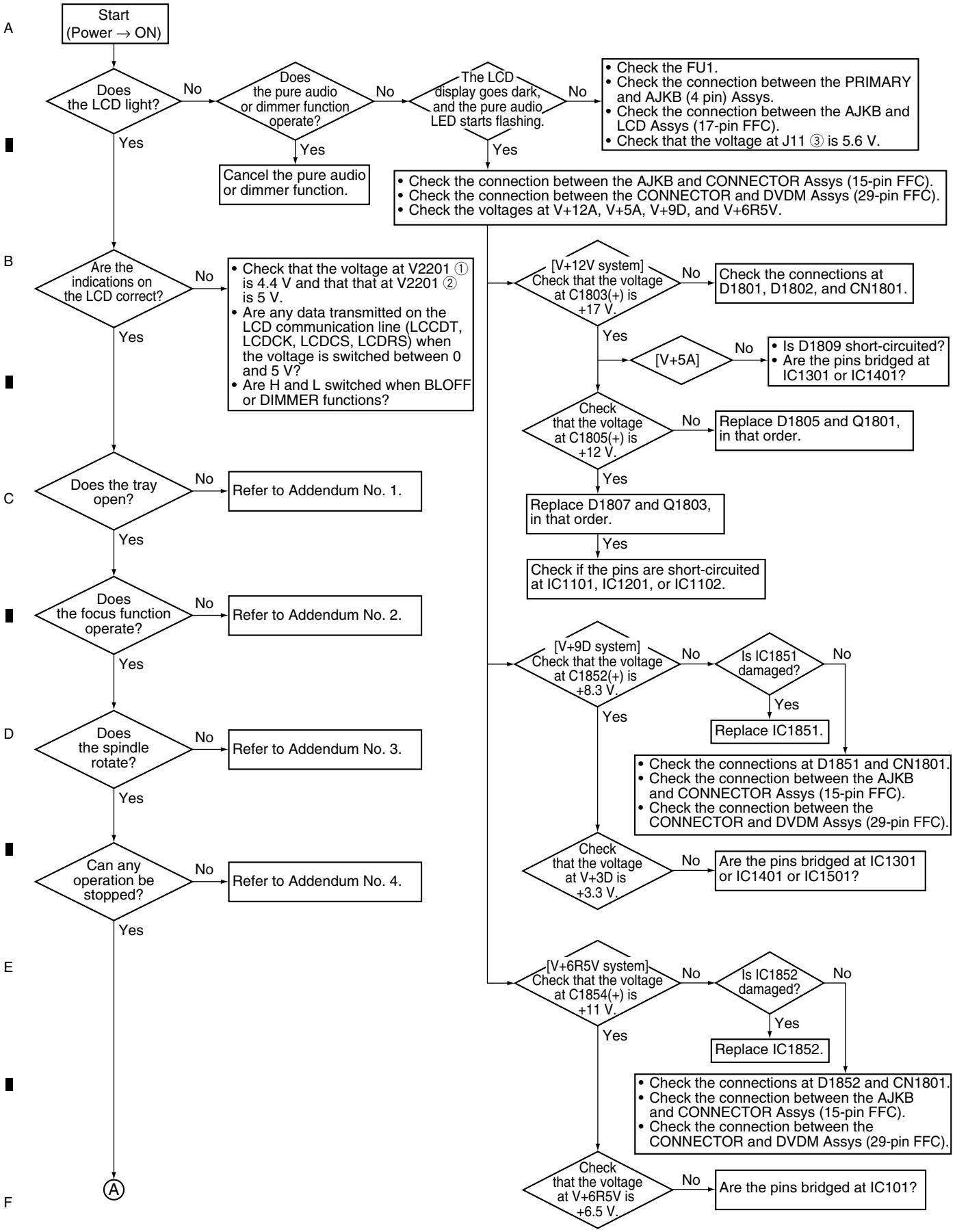
- **No playback of a DVD (Test Mode), No playback of a SACD :**

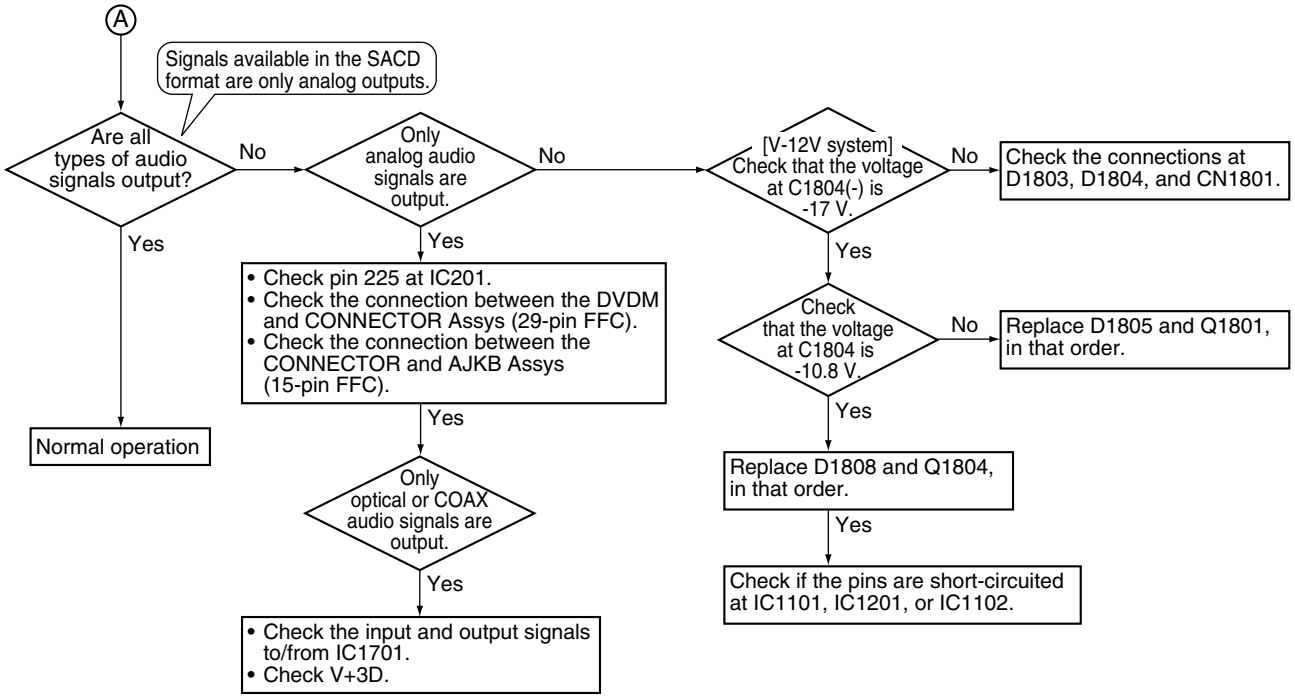
  Measure the voltage between the both ends of R322 or R325 on the DVDM Assy. If the voltage is 0.4 V or higher, the 650-nm LD is degraded.

If the measurements show degradation of an LD, replace the 05SD Pickup Assy.



7.1.3 TROUBLE SHOOTING


Start
(Power → ON)
Does the LCD light?
No
Does the pure audio or dimmer function operate?
No
The LCD display goes dark, and the pure audio LED starts flashing.
No
• Check the FU1.
• Check the connection between the PRIMARY and AJKB (4 pin) Assys.
• Check the connection between the AJKB and LCD Assys (17-pin FFC).
• Check that the voltage at J11 ③ is 5.6 V.
Yes
Cancel the pure audio or dimmer function.
Yes
• Check the connection between the AJKB and CONNECTOR Assys (15-pin FFC).
• Check the connection between the CONNECTOR and DVDM Assys (29-pin FFC).
• Check the voltages at V+12A, V+5A, V+9D, and V+6R5V.
Are the indications on the LCD correct?
No
• Check that the voltage at V2201 ① is 4.4 V and that that at V2201 ② is 5 V.
• Are any data transmitted on the LCD communication line (LCCDT, LCDCK, LCDCS, LCDRS) when the voltage is switched between 0 and 5 V?
• Are H and L switched when BLOFF or DIMMER functions?
Yes
Does the tray open?
No
Refer to Addendum No. 1.
Yes
Does the focus function operate?
No
Refer to Addendum No. 2.
Yes
Does the spindle rotate?
No
Refer to Addendum No. 3.
Yes
Can any operation be stopped?
No
Refer to Addendum No. 4.
Yes
Ⓐ
[V+12V system] Check that the voltage at C1803(+) is +17 V.
No
Check the connections at D1801, D1802, and CN1801.
Yes
[V+5A]
No
• Is D1809 short-circuited?
• Are the pins bridged at IC1301 or IC1401?
Check that the voltage at C1805(+) is +12 V.
No
Replace D1805 and Q1801, in that order.
Yes
Replace D1807 and Q1803, in that order.
Yes
Check if the pins are short-circuited at IC1101, IC1201, or IC1102.
[V+9D system] Check that the voltage at C1852(+) is +8.3 V.
No
Is IC1851 damaged?
No
Yes
Replace IC1851.
Yes
• Check the connections at D1851 and CN1801.
• Check the connection between the AJKB and CONNECTOR Assys (15-pin FFC).
• Check the connection between the CONNECTOR and DVDM Assys (29-pin FFC).
Check that the voltage at V+3D is +3.3 V.
No
Are the pins bridged at IC1301 or IC1401 or IC1501?
[V+6R5V system] Check that the voltage at C1854(+) is +11 V.
No
Is IC1852 damaged?
No
Yes
Replace IC1852.
Yes
• Check the connections at D1852 and CN1801.
• Check the connection between the AJKB and CONNECTOR Assys (15-pin FFC).
• Check the connection between the CONNECTOR and DVDM Assys (29-pin FFC).
Check that the voltage at V+6R5V is +6.5 V.
No
Are the pins bridged at IC101?


A
Signals available in the SACD format are only analog outputs.
Are all types of audio signals output?
No
Yes
Normal operation
Only analog audio signals are output.
No
Yes
• Check pin 225 at IC201.
• Check the connection between the DVDM and CONNECTOR Assys (29-pin FFC).
• Check the connection between the CONNECTOR and AJKB Assys (15-pin FFC).
Yes
Only optical or COAX audio signals are output.
Yes
• Check the input and output signals to/from IC1701.
• Check V+3D.
[V-12V system] Check that the voltage at C1804(-) is -17 V.
No
Check the connections at D1803, D1804, and CN1801.
Yes
Check that the voltage at C1804 is -10.8 V.
No
Replace D1805 and Q1801, in that order.
Yes
Replace D1808 and Q1804, in that order.
Yes
Check if the pins are short-circuited at IC1101, IC1201, or IC1102.

No.	Symptoms	Diagnosis Contents	Possible Defective Points
1	The power is not turned on.	Are wires of output connector (POWER SUPPLY Unit) and CN901 (DVDM Assy) disconnected or damaged ?	Connector / cable
		Check that the following voltage is output : + side of C739 : 3.3V	**DVDM Assy** 3.3V Regulator IC (IC341)
2	An opening screen is not displayed on the monitor (The FL display lights. The mechanism does not work.)	Are the signals output from IC201-pin 98 (MDATA) and pin 99 (SCLK) on the DVDM Assy ? (in the range of 0-3V)	**DVDM Assy** DVD IC (IC201)
		Are the signals input into IC2101-pin 50 (MDATA) and pin 51 (SCLK) on the LCD Assy ? (in the range of 0-3V)	**LCD Assy** UCOM (IC2101)
		Check that the following voltage are output : IC751-pin 1 on the DVDM Assy : 5V	**DVDM Assy** 5V Regulator IC (IC751)
		Is a resonator (X202: 27MHz) on the DVDM Assy oscillating ?	**DVDM Assy** Crystal resonator (X202)
	Addendum No.1	• Is a signal input into IC203-pin26 (PCE#) on the DVDM Assy ? (Is a signal "H" for 80 mS and then "L" after the power is turned on ?) → Communication with flash ROM. • Are the signals input into IC202-pin 16 (DWE#), pin 19 (DCS#) and pin 38 (SDCLK) on the DVDM Assy ? (Is a signal fluctuating ?) → Communication with SDRAM	**DVDM Assy** DVD IC (IC201) Flash ROM (IC203) SDRAM (IC202)
		Is a signal output from IC203-pin 28 (PRD#) on the DVDM Assy? (Is a signal fluctuating for several hundred mS after the power is turned on ?)	**DVDM Assy** Flash ROM (IC203)
		Is a signal input into IC2101-pin 67 (DVD ACK) on the LCD Assy ? (Is a signal fluctuating ?) → Communication with FL Control IC	**DVDM Assy** DVD IC (IC201) **LCD Assy** UCOM (IC2101)
		Is a signal output from IC2101-pin 30 (XREADY) on the LCD Assy ? (Is a signal fluctuating in the range of 0-5V ?)	**LCD Assy** UCOM (IC2101)
		Are the signals output from IC2101-pin 49 (SDATA) on the LCD Assy ? (in the range of 0-5V)	**DVDM Assy** DVD IC (IC201) **LCD Assy** UCOM (IC2101)
		Are the signals of IC204-pin 5(SDA) and pin 6(SCL) on the DVDM Assy fluctuating for one or two seconds after the power is turned ?	**DVDM Assy** EEPROM (IC204)
3	A tray cannot be opened. (An opening screen is displayed on the monitor)	Does the voltage of CN104-pin 3 and pin 5 on the DVDM Assy change normally ? Pin 3 (SW2(TRIN)): Tray is fully closed: "L" Pin 5 (SW1(TROUT)): Tray is fully opened: "L"	**LOAB Assy** Tray SW (S101)
		Is the signal input into IC101-pin 11 (TROPEN) on the DVDM Assy ? At open: 3.3V, At close: 0V	**DVDM Assy** DVD IC (IC201)
		Are the signals output from IC101-pin 1 and pin 2 (CN103-pin 1 and pin 2) on the DVDM Assy ? Pin 2: Approx. 6V during opening tray approx. 0V during closing tray. Pin 1: Approx. 0V during opening tray approx. 6V during closing tray.	**DVDM Assy** FTS Driver IC (IC101)
		Are wires of CN104 and CN103 on the DVDM Assy disconnected or damaged ?	Connector / cable
		Does the voltage of CN102-pin 1 on the DVDM Assy change to 0V by pressing the Inside switch.	Inside switch

No.	Symptoms	Diagnosis Contents	Possible Defective Points
4	Addendum No.2 Playback impossible (no focusing)	Are the signals output from IC101-pin 3 (FOCS_DRV) and pin 4 (FOCS_RTN) on the DVDM Assy ?	**DVDM Assy** FTS Driver IC (IC101)
		Does 650-nm LD emit light ? Does a pickup lens move up / down ? Does an actuator spring bend ?	Pickup
		Are plastic parts damaged ? Or is a shaft detached ? Is the turntable detached or tilted ?	Mechanism section (motor)
		Is flexible cable of CN101 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 42 (FOSO) on the DVDM Assy ? (Device control of about 1.4 V is output usually. It is fluctuated by about ± 250 mV with focus up / down.)	**DVDM Assy** DVD IC (IC201)
5	Addendum No.3 Playback impossible (Spindle does not turn)	Are the signals output from IC101-pin 30 (W), pin 33 (V) and pin 35 (U) on the DVDM Assy ? Is pin 26 (STBY) fixed LOW ? (pin 26 is High at playback: 3V)	**DVDM Assy** FTS Driver IC (IC101)
		Is there any part detached from the spindle motor ? Or Is there any foreign object lodged in it ?	Mechanism section (Spindle motor)
		Are wires of CN102 on the DVDM Assy disconnected or damaged ?	Flexible cable / connector
		Is signal output from IC201-pin 37 (DMSO) on the DVDM Assy ?	**DVDM Assy** DVD IC (IC201)
6	Addendum No.4 Playback impossible (Playback stops)	Does 650-nm LD deteriorate ? If the voltage at each both ends of R322 and R325 on the DVDM Assy is 0.4 V or more, the 650-nm LD is definitely deteriorated.	650-nm LD deteriorated. (When playback of a DVD is impossible)
		Does 780-nm LD deteriorate ? If the voltage at each both ends of R321 and R326 on the DVDM Assy is 0.4 V or more, the 780-nm LD is definitely deteriorated.	780-nm LD deteriorated. (When playback of a CD is impossible)
		Is there abnormality in FG waveform ? (IC201-pin 47)	**DVDM Assy** FG output : FTS Driver IC (IC101)
		Are there scratches or dirt on the disc ?	Disc

7.1.4 SEQUENCE AFTER POWER ON/OFF

Normal POWER-ON sequences

Set time for the current step	Elapsed time	Details on control
————	0 msec	**POWER ON start, Various initial settings** ① All keys are masked. XSYSMUTE ON
+ 60 msec	60 msec	**Various initial settings** ② SYSPOW ON When the power is turned on, the HELLO display is requested (3.5 sec).
+ 240 msec	300 msec	**Various initial settings** ③ RESET L ⇒ H
+ 60 msec	360 msec	**Various initial settings** ④ Control of the LCD driver starts. Data transmission
+ 1020 msec	1380 msec	**Various initial settings** ④ Bus communication starts.
+ 390 msec	1770 msec	**Various initial settings** ⑤
+ 120 msec	1890 msec	**Various initial settings** ⑥ Masking of all keys is canceled.
+ 3120 msec	5010 msec	**Various initial settings** ⑦ Temporary data transmission
+ 30 msec	5040 msec	**POWER ON completed**

Normal POWER-OFF sequences

Set time for the current step	Elapsed time	Details on control
————	0 msec	**POWER OFF start, Various settings** ① The mask flags for all keys are set.
+ 30 msec	30 msec (Note 1)	**Various settings** ② Whether the DVD is turned off or not is checked. Bus communication is terminated.
+ 120 msec	150 msec	**Various settings** ③
+ 330 msec	480 msec	**Various settings** ④
+ 1320 msec	1800 msec	**Various settings** ④ All the indications on the LCD are deleted.
+ 90 msec	1890 msec	**Various settings** ⑤
+ 240 msec	2130 msec	Processing for the ports required when the power is turned off
+ 30 msec	2160 msec	**POWER OFF completed** (passes every loop in the POWER OFF)

Note 1: In this step, the unit wait for the DVD module to turn the power off. If the DVD module takes a longer time to turn itself off, the elapsed time will become longer, by just that much.

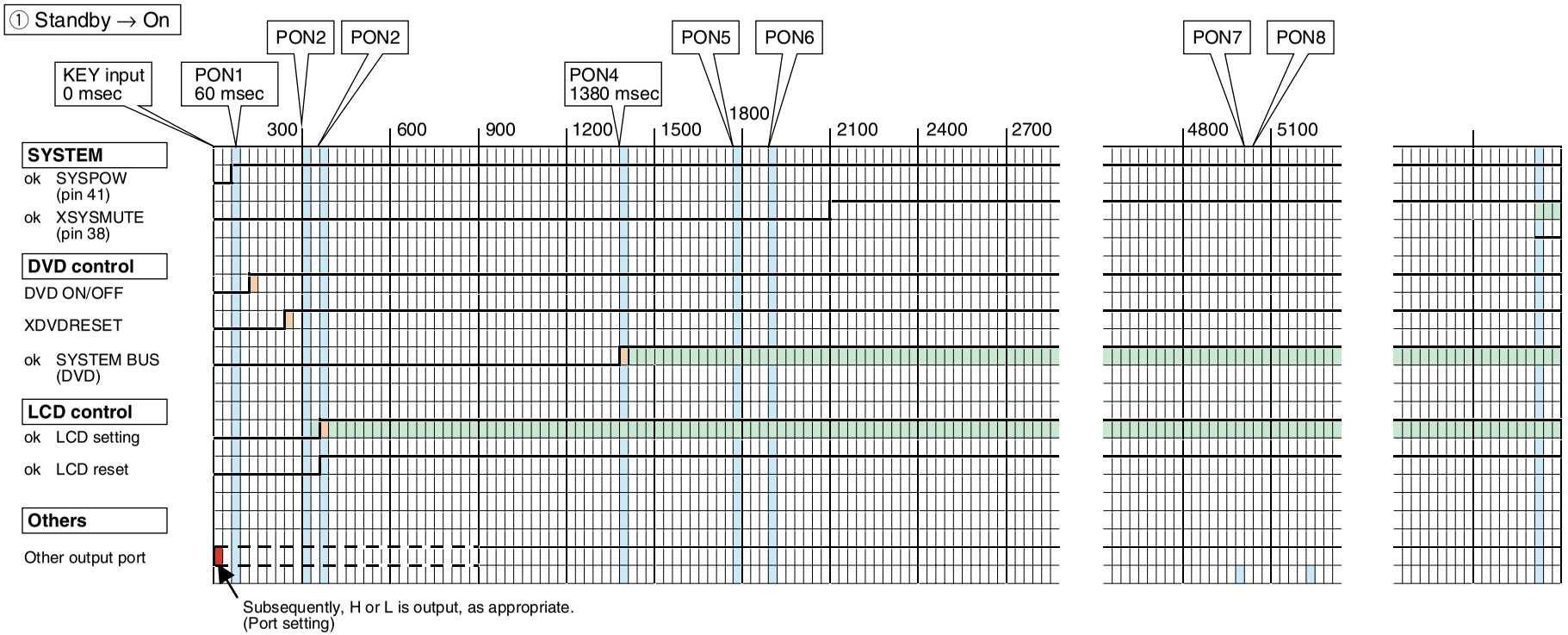
Display Only POWER-ON sequences

Set time for the current step	Elapsed time	Details on control
————	0 msec	**Display only POWER ON start, Various initial settings** ① All keys are masked. The normal operation keys are masked. POWER MUTE ON SYSTEM POWER1 ON (Pin 91: H)
+ 60 msec	60 msec	**Various initial settings** ②
+ 240 msec	300 msec	**Various initial settings** ③ Switched 5 V ON completed (power supply is stabilized) Masking of the normal operation keys is canceled. SYSTEM POWER2 ON (Pin 92: H)
+ 60 msec	360 msec	**Various initial settings** ④ Power-on of the LCD driver starts.
+ 330 msec	690 msec	**Display Only POWER ON completed**

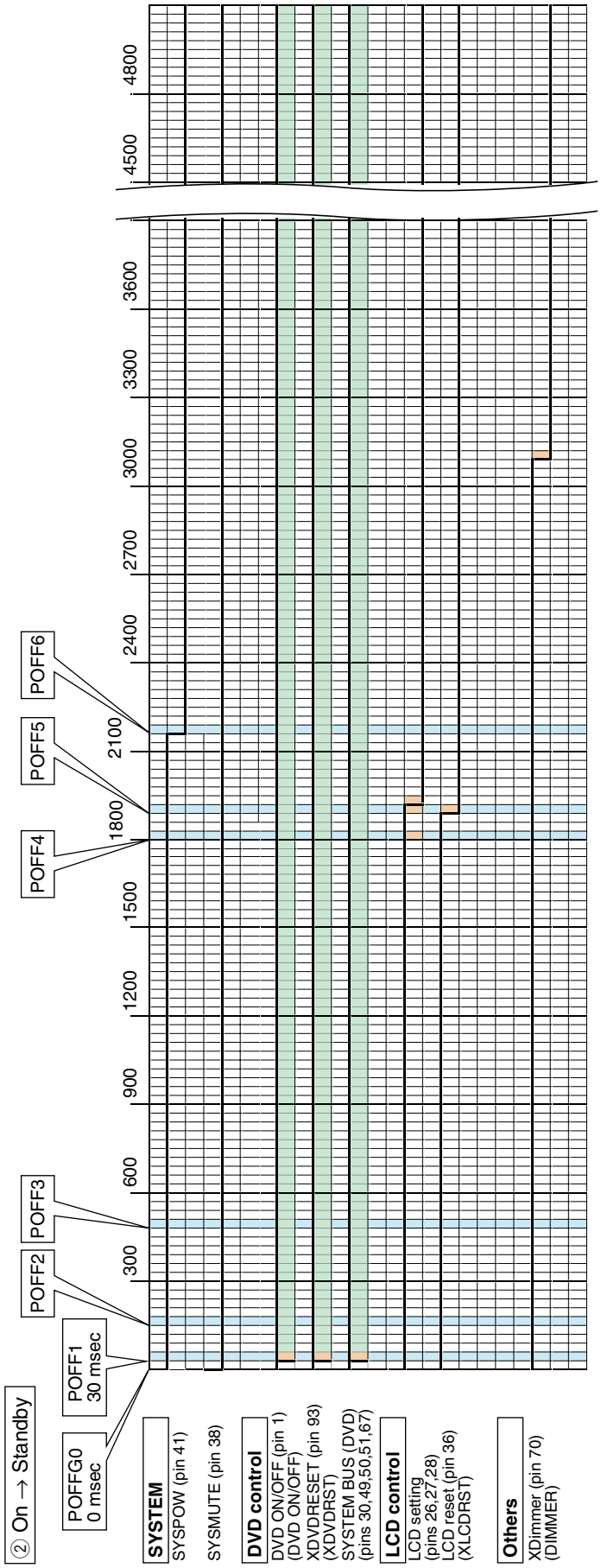
Display-only POWER-OFF sequences

Set time for the current step	Elapsed time	Details on control
————	0 msec	**Display-only POWER OFF start, Various settings** ① • The mask flags for all the keys are set. • The mask flags for the normal operation keys are set. • Muting the power system (SYSTEM MUTE REQUEST) • Power-off of the LCD driver starts.
+ 4120 msec	4120 msec	**Various settings** ②
+ 120 msec	4240 msec	**Various settings** ③
+ 760 msec	5000 msec	**Various settings** ④ • The mask flags for all keys are set. • Muting of the power system is canceled. • Other than in an emergency power-off, the unit awaits for a while. • SYSTEM POWER2 OFF (Pin 92: H)
+ 240 msec	5240 msec	**Display-only POWER OFF completed** • SYSTEM POWER1 OFF (Pin 91: H)

POWER-ON timing waveform



POWER-OFF timing waveform



7.1.5 DISASSEMBLY

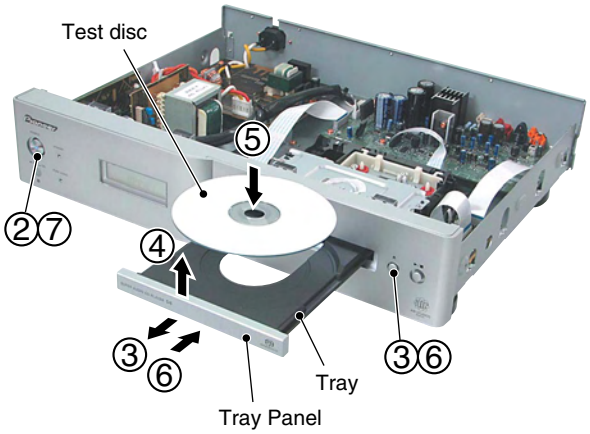
Note 1: Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
Note 2: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.
Note 3: For performing the diagnosis the DVDM ASSY side B, the following jigs for service is required:
• Cable for service (GGD1425)

Diagnosis of PCB's

1 Bonnet , Tray Panel

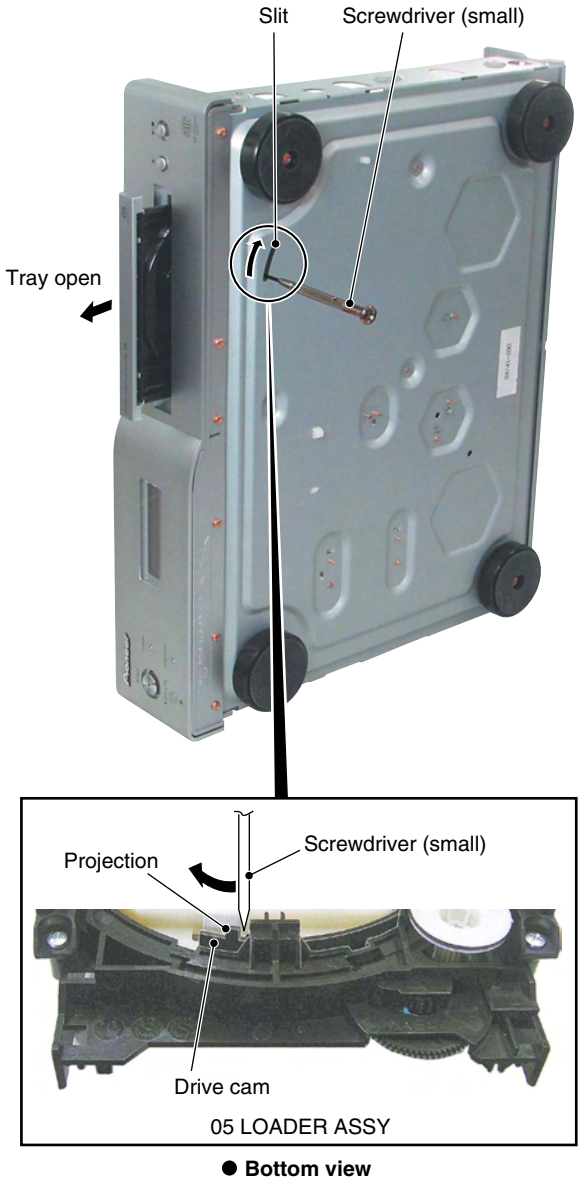
① Remove the Bonnet by removing the ten screws.

② Press the ⏻ STANDBY/ON button to turn on the power.
③ Press the ⏏ OPEN/CLOSE button to open the Tray.
④ Remove the Tray Panel.
⑤ Set the Test Disc.
⑥ Press the ⏏ OPEN/CLOSE button to close the Tray. (Test Disc is clamped.)
⑦ Press the ⏻ STANDBY/ON button to turn off the power.
⑧ Pull out the Power cord.



● How to open the Tray when the power cannot be on

Insert a Screwdriver (small) into the Slit located at the bottom of the unit, and slide the projection of the Drive Cam in the 05 LOADER ASSY in the direction of the arrow, as indicated in the photo. If the Tray pops out a little, fully pull it out by hand.

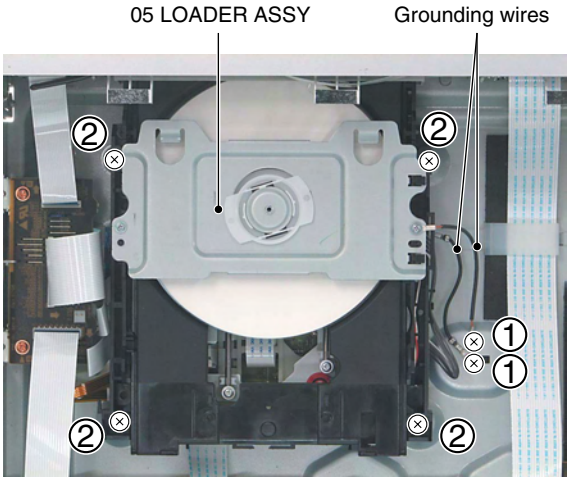


● Bottom view

2 DVDM ASSY

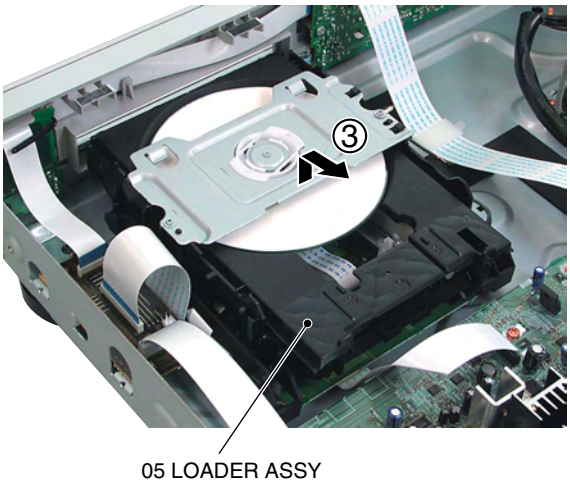
① Remove the two screws which secure two Grounding wires in place.

② Remove the four screws.

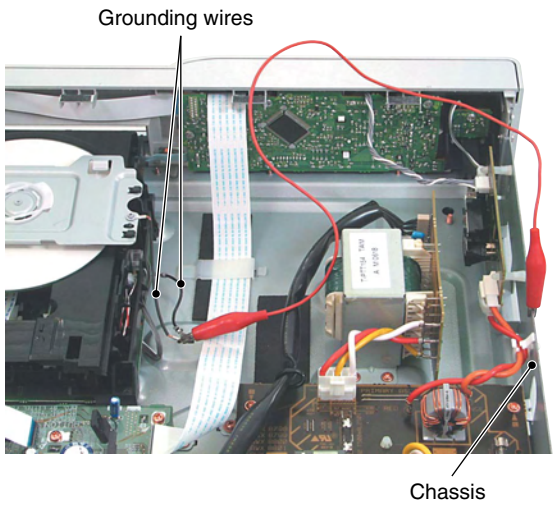


● **Top View**

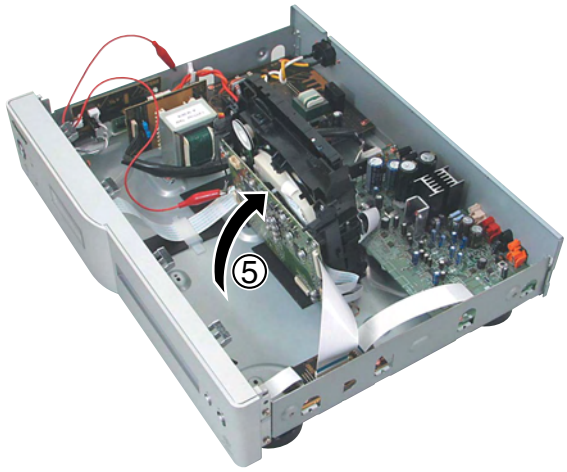
③ Slightly lift the 05 LOADER ASSY and displace it slightly backward.



④ Extend the two Grounding wires which were removed in procedures ① and connect them to Chassis for grounding.

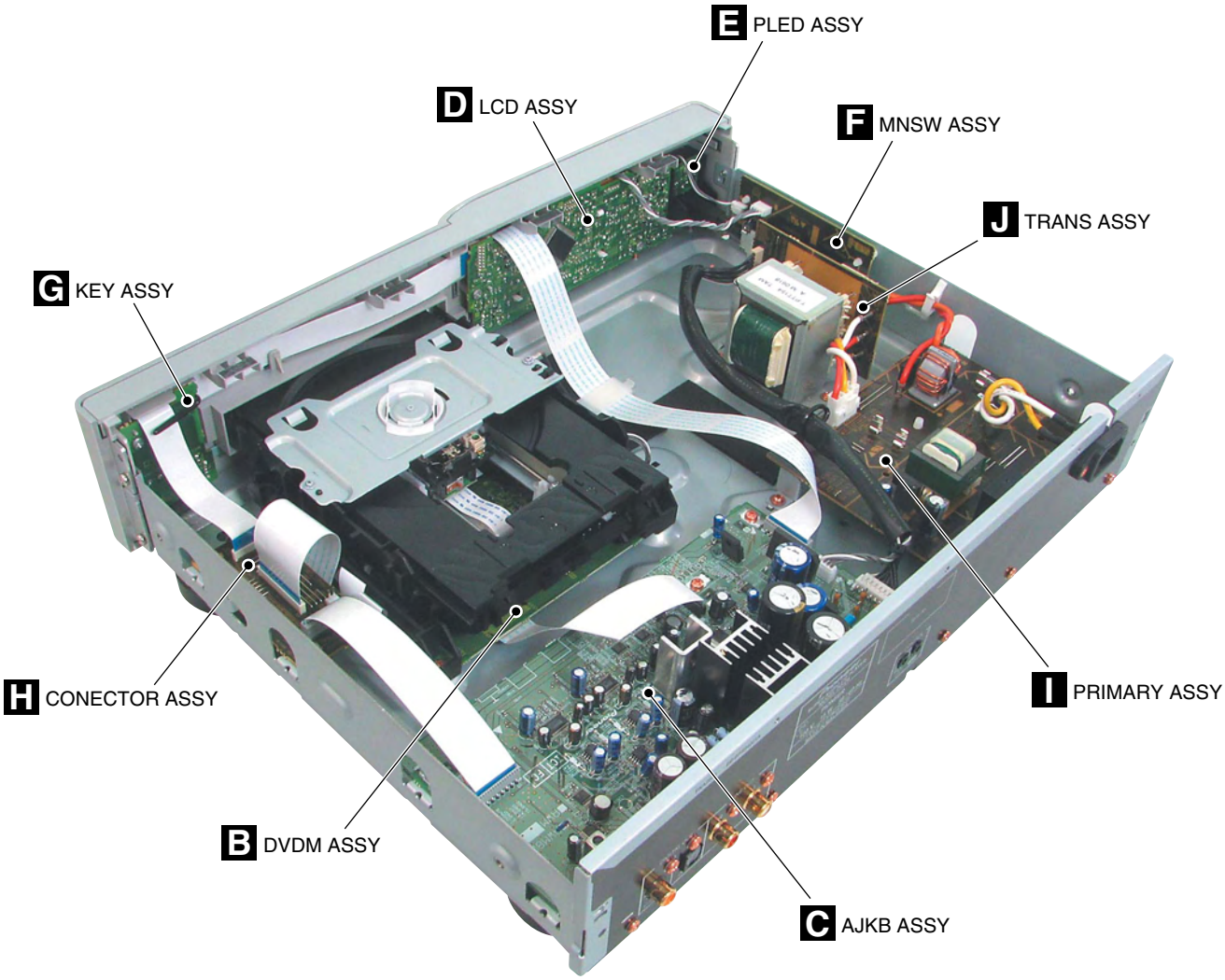


⑤ Raise the 05 LOADER ASSY.



Diagnosis

Note: Service cable 5P (GGD1425) is required when diagnosing the DVDM ASSY side B.

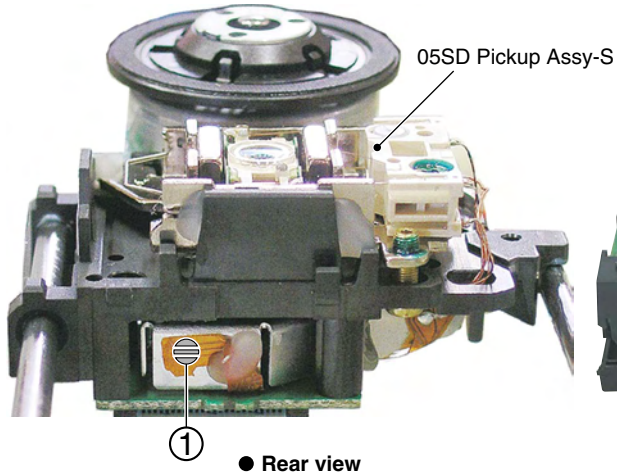

E PLED ASSY
D LCD ASSY
F MNSW ASSY
J TRANS ASSY
G KEY ASSY
H CONECTOR ASSY
I PRIMARY ASSY
B DVDM ASSY
C AJKB ASSY

Removing the Traverse Mechanism Assy-S and 05SD Pickup Assy-S

1 05 LOADER Assy

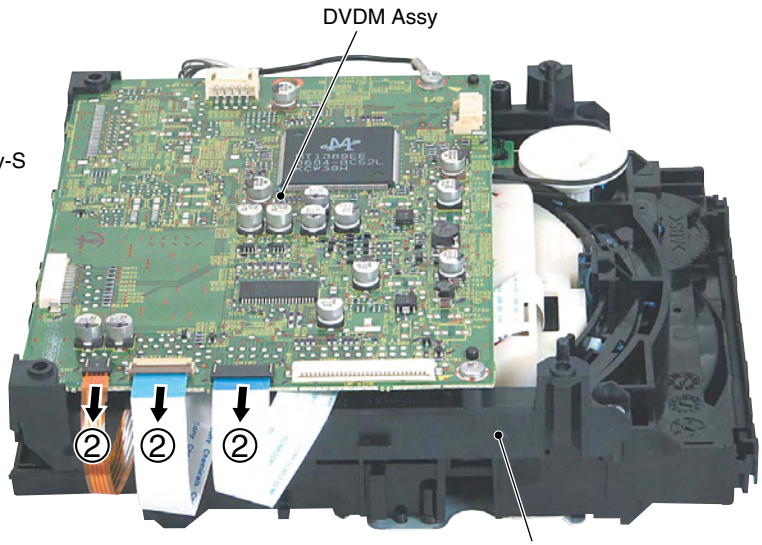
① Short-circuit point by soldering.

Note: After replacement, connect the flexible cable for pickup, then remove the soldered joint (open).



● **Rear view**

② Disconnect the three flexible cables.



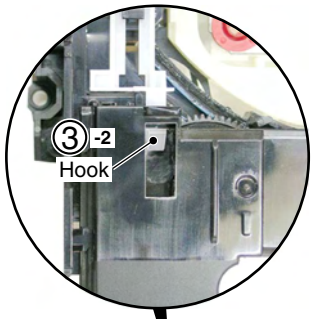
● **Bottom view** 05 LOADER Assy

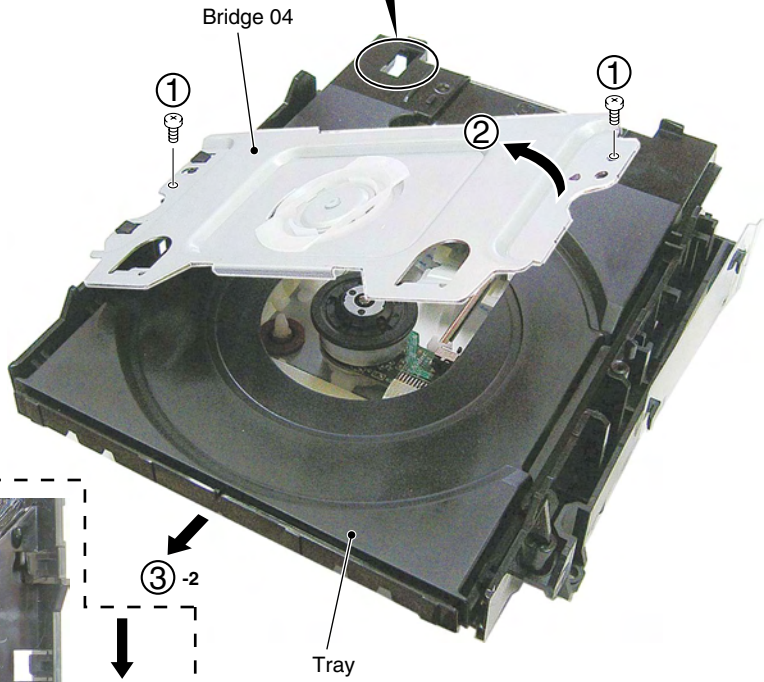
2 Bridge 04, Tray

① Remove the one screw.

② Remove the bridge 04.

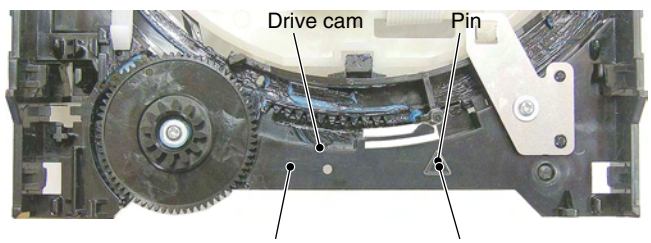
③ Pull out the tray, then remove it by pressing the hook.





Note when reinserting the tray

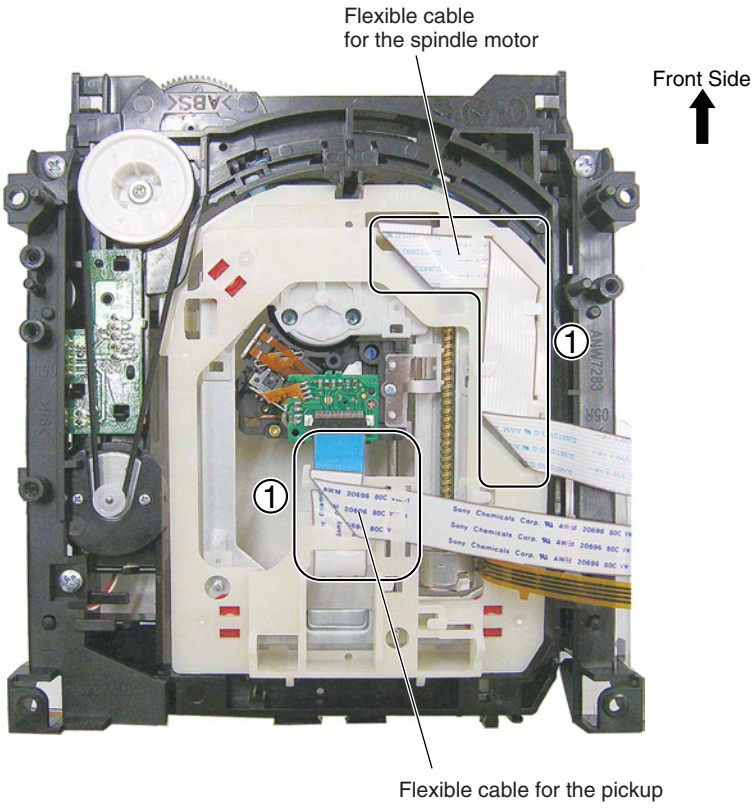
When reinserting the tray, first align the triangle printed on the loading base and the pin of the drive cam, then insert the tray.



Front side

3 Traverse Mechanism Assy-S

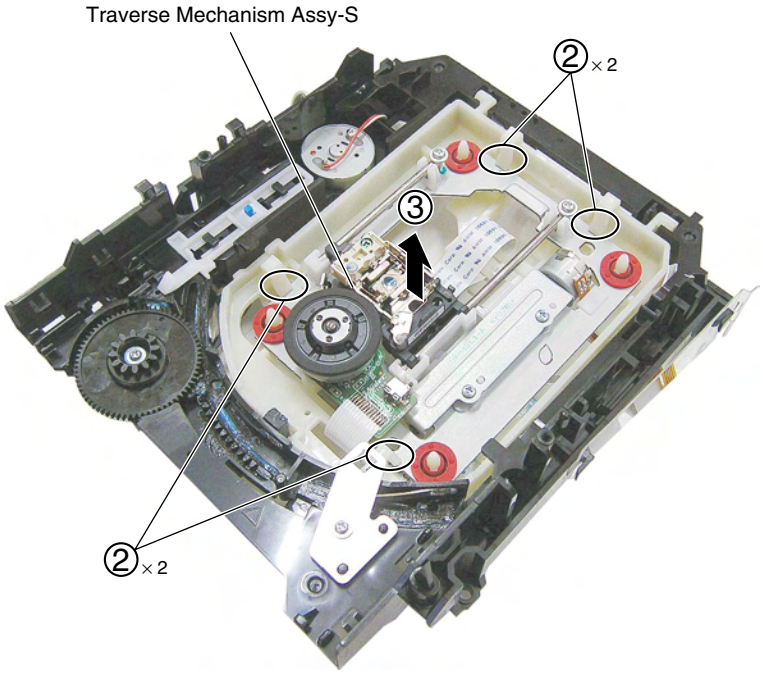
① Dislodge the two flexible cables from their factory placement.



● **Bottom view**

② Unhook the four hooks.

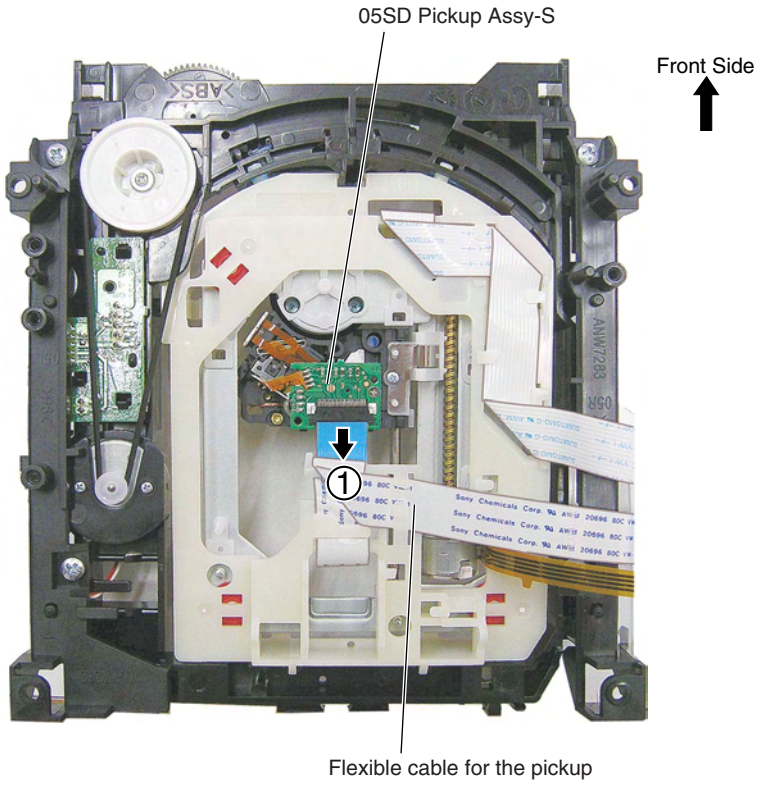
③ Remove the Traverse Mechanism Assy-S



4 05SD Pickup Assy-S

Note: The 05SD Pickup Assy can be removed without removing the TTraverse Mechanism Assy-S.(shown as Step 3.)

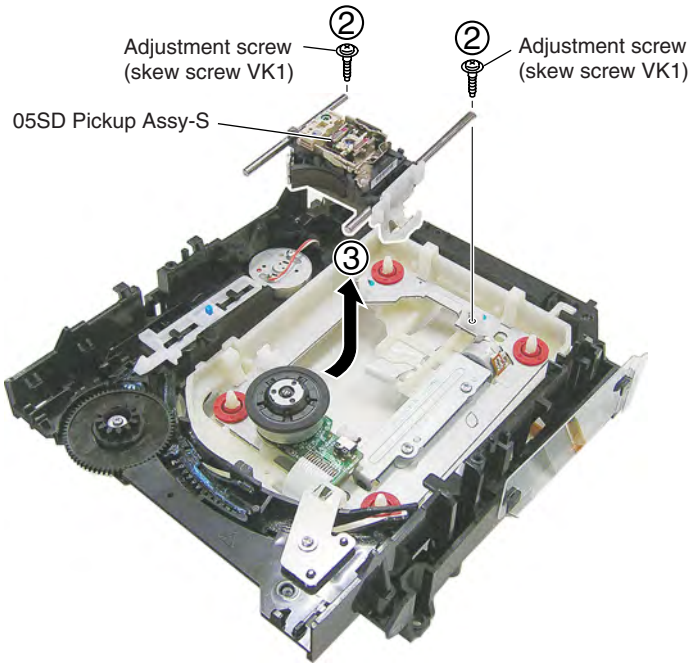
① Disconnect the flexible cable for the pickup.



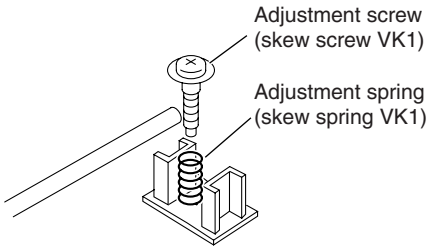
● **Bottom view**

② Remove the two adjustment screws.

③ Remove the 05SD Pickup Assy.

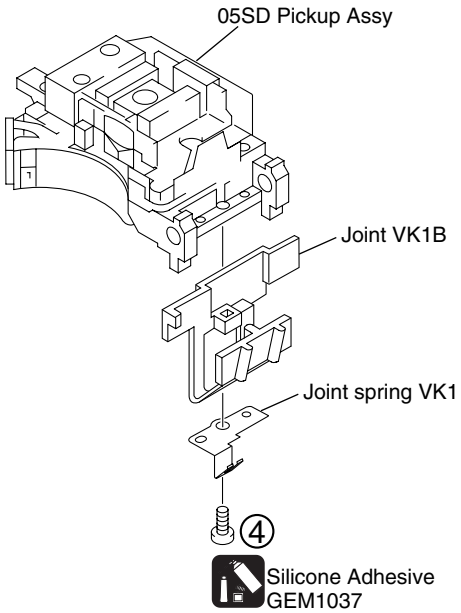


Note: Be careful not to lose the adjustment spring (skew spring VK1).



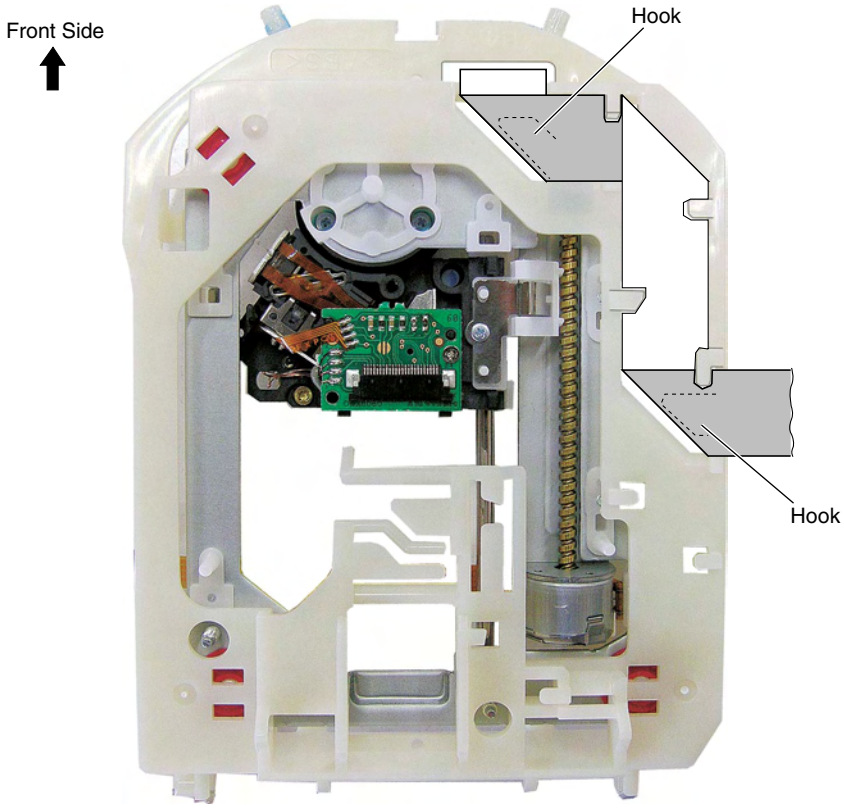
④ Remove the one screw.

Note: The screw is secured with the silicone adhesive.
Make sure to apply the silicone adhesive after reattaching the screw.



Arrangement of the flexible cable for the spindle motor

: Conductive surface



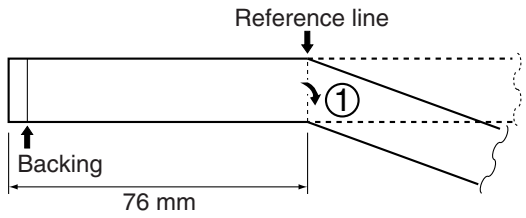
● **Bottom view**

Arrangement of the flexible cable for the pickup

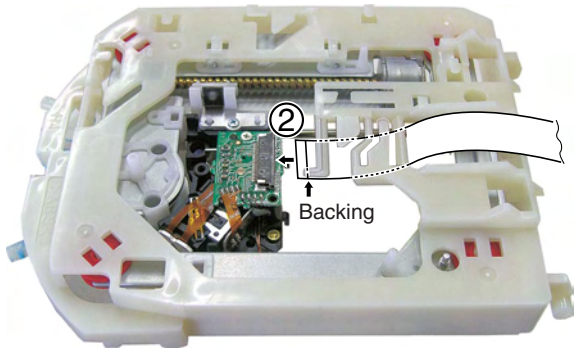
: Conductive surface

Note:
Be sure to move the 05SD Pickup Assy to the innermost perimeter.

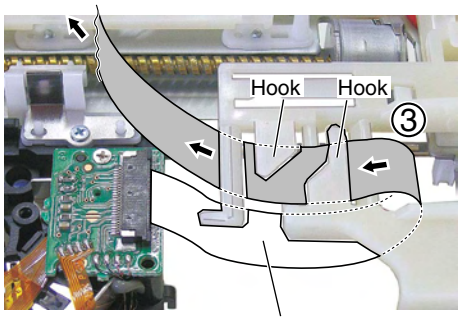
① Fold the flexible cable for the pickup with the backing outward in the illustration below.



② Attach the flexible cable for the pickup to the connector.

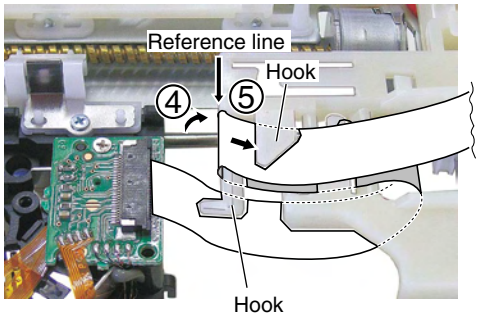


③ Pass the flexible cable through the hook.



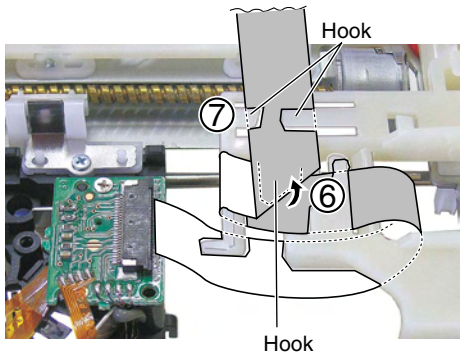
④ Hook the part folded in Step ① to the hook.

⑤ Pass the flexible cable through the hook.



⑥ Fold the flexible cable along the hook.

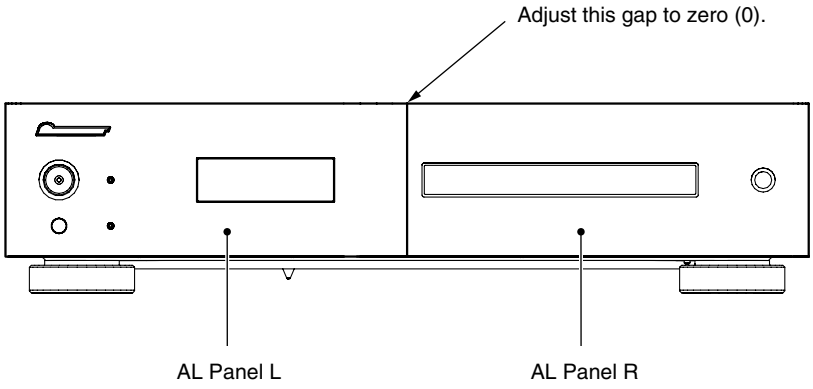
⑦ Pass the flexible cable through the hook.

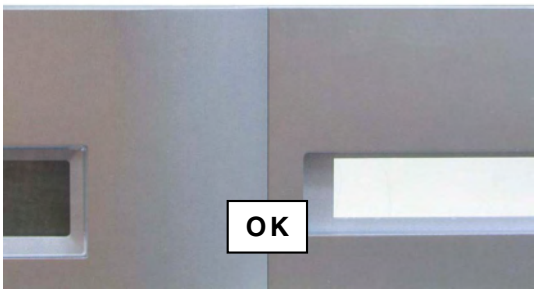


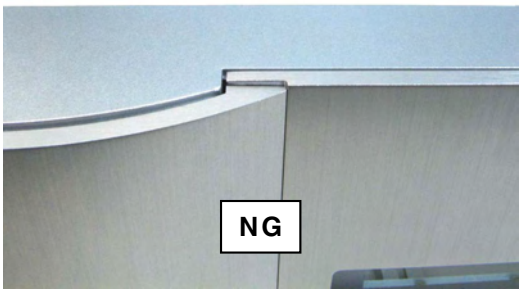
7.1.6 PANEL ADJUSTING

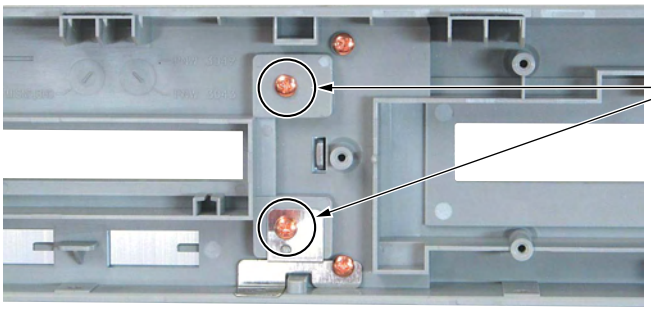
How to adjust the AL Panel (when replacing the AL Panel L)

Set the top and bottom edges of the AL Panel L even with R and tighten the screws.









Screw for securing the AL Panel L
(Tighten the screw while adjusting the gap.)

● **Rear face of the Panel ASSY**

7.2 PARTS
7.2.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

• List of IC

PDC148A, MT1389EE/B2-L

■ PDC148A (LCD ASSY : IC2101)

• System Control Microcomputer

● Pin Function

No.	Mark	Pin Name	I/O	Pin Function
1	PA3/WR#	NC	O	
2	PA4/RD#	NC	O	
3	PA5/RS	NC	O	
4	P70 / INT0 / T0LCP / AN8	ACPULSE	I	AC PULSE input(Interruption)
5	P71 / INT1 / T0HCP / AN9	LED2	O	Power-on indicator
6	P72 / INT2 / T0IN	LED1	O	Pure audio indicator
7	P73 / INT3 / T0IN	REMOCON	I	REMOCON signal input(Interruption)
8	RES#	XRESET	I	μ -com reset input
9	XT1 / AN10	XT1	–	32.768kHz sub clock connection (0.1W correspondence)
10	XT2 / AN11	XT2	–	32.768kHz sub clock connection (0.1W correspondence)
11	VSS1	VSS1	–	VSS1
12	CF1	CF1	–	10MHz crystal oscillator
13	CF2	CF2	–	10MHz crystal oscillator
14	VDD1	VDD1	–	VDD1
15	P80 / AN0	SIMUKE	I	Destination distinction input
16	P81 / AN1	NC	I	
17	P82 / AN2	VDET	I	DVD3.3V detection input
18	P83 / AN3	KEY1	I	Key Input
19	P84 / AN4	NC	I	Key Input
20	P85 / AN5	NC	I	
21	P86 / AN6	NC	I	
22	P87 / AN7	NC	I	
23	P10 / SO0	XDFDT	O	AQE serial control DATA
24	P11 / SI0 / SB0	XDFCS	O	AQE serial control CS
25	P12 / SCK0	XDFCLK	O	AQE serial control CLK
26	P13 / SO1	LCDDAT	O	Data for LCD driver
27	P14 / SI1 / SB1	LCDCS	O	Chip enable for LCD driver
28	P15 / SCK1	LCDCLK	O	Clock for LCD driver
29	P16 / T1PWML	XDFRST	O	AQE reset
30	P17 / T1PWMH/BUZ	XREADY	O	Chip select for system bus(MTK XREADY)
31	PE0	XPCM/DSD	O	PCM/DSD data select
32	PE1	NC	O	
33	PE2	NC	O	
34	PE3	NC	O	
35	PE4	NC	O	
36	PE5	XDACRST	O	DAC reset
37	PE6	NC	O	
38	PE7	XSYSMUTE	O	Control mute of system
39	VSS4	VSS4	–	VSS4
40	VDD4	VDD4	–	VDD4

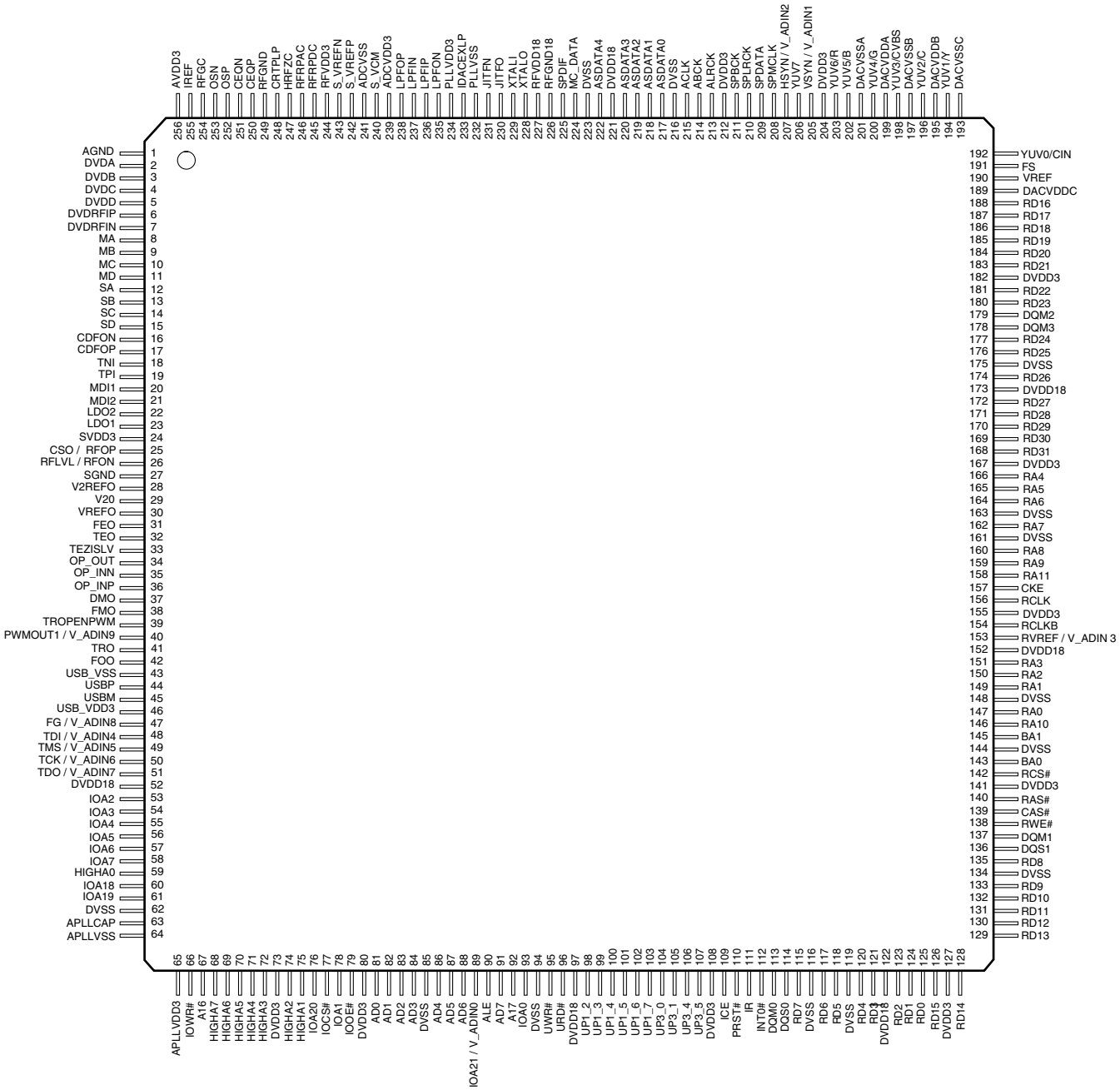
No.	Mark	Pin Name	I/O	Pin Function
41	PF0	SYSPOW	O	Control power supply of system
42	PF1	NC	O	
43	PF2	STEST	I	Set TESTMODE for Service
44	PF3	UTEST	I	Set UNITCHECK for checker
45	PF4	NC	O	
46	PF5	NC	O	
47	PF6	NC	O	
48	PF7	NC	O	
49	SI2P0/SO2	SDATA	O	System bus data output (AMP side output) for DVD
50	SI2P1/SI2/SB2	MDATA	I	System bus data input (AMP side input) for DVD
51	SI2P2/SCK2	SCLK	I	System bus clock input
52	SI2P3/SCK20	XDVDRST	O	RESET to DVD MODULE
53	PWM1	NC		
54	PWM0	NC		
55	VDD2	VDD2	–	VDD2
56	VSS2	VSS2	–	VSS2
57	P00	NC	O	
58	P01	NC	O	
59	P02	NC	O	
60	P03	NC	O	
61	P04	NC	O	
62	P05	NC	O	
63	P06	NC	O	
64	P07	NC	O	
65	P20/INT4/T1IN	NC	O	
66	P21/INT4/T1IN	NC	I	
67	P22/INT4/T1IN	DVDACK	I	Ackknowlegement from DVD MODULE(Interruption)
68	P23/INT4/T1IN	NC	I	
69	P24/INT5/T1IN	NC	O	
70	P25/INT5/T1IN	NC	O	
71	P26/INT5/T1IN	NC	O	
72	P27/INT5/T1IN	NC	O	
73	P30	NC	O	
74	P31	TRIN	I	LOADING SW2 INPUT
75	P32	TROUT	I	LOADING SW1 INPUT
76	P33	LOADGAIN	O	Loading gain select
77	P34	NC	O	
78	P35	NC	O	
79	P36	NC	O	
80	PB7/D7	DVDM ON/OFF	O	Control power supply for DVD module

No.	Mark	Pin Name	I/O	Pin Function
81	PB6/D6	NC	O	
82	PB5/D5	XLCDRST	O	Reset for LCD driver (standby)
83	PB4/D4	NC	O	
84	PB3/D3	NC	O	
85	PB2/D2	LCDRS	O	LCD register select signal
86	PB1/D1	NC	O	
87	PB0/D0	NC	O	
88	VSS3	VSS3	–	VSS3
89	VDD3	VDD3	–	VDD3
90	PC7/A7	P_SPDIF_POW	O	SPDIF output on/off control
91	PC6/A6	NC	O	
92	PC5/A5	SYSPOW2	O	0.1W correspondence of System Power Control
93	PC4/A4	MSDCT	I	Mechanical power SW detect
94	PC3/A3	DIMMER	O	Dimmer control
95	PC2/A2	BLON	O	LCD Backlight ON
96	PC1/A1	LED3	O	Standby indicator
97	PC0/A0	NC	O	
98	PA0/CS2#	FLASHE/D	–	for FLASH writing
99	PA1/CS1#	FLASHDO	–	for FLASH writing
100	PA2/CS0#	FLASHCLK	–	for FLASH writing

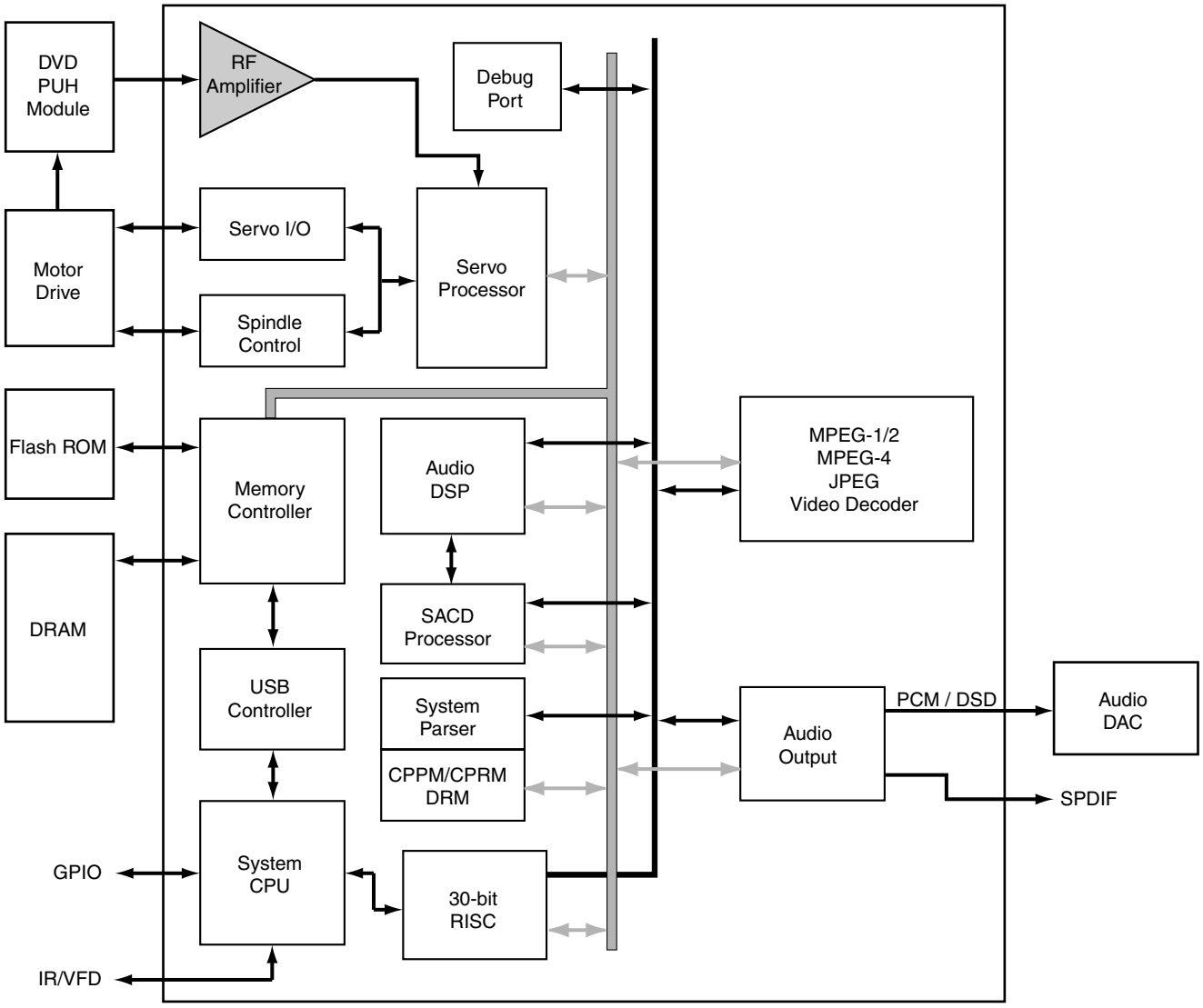
MT1389EE/B2-L (DVDM ASSY : IC201)

• DVD IC

● Pin Arrangement



● Block Diagram



● Pin Function

■ RF Interface (28)

No.	Name	Alt.	I/O	Function
226	RFGND18		Ground	Analog ground
227	RFVDD18		Power	Analog power 1.8V
250	CEQP		Analog output	EQ offset loop capacitance
251	CEQN		Analog output	EQ offset loop capacitance
252	OSP		Analog output	RF Offset cancellation capacitor connecting
253	OSN		Analog output	RF Offset cancellation capacitor connecting
254	RFGC		Analog output	RF AGC loop capacitor connecting for DVD-ROM
255	IREF		Analog Input	Current reference input
256	AVDD3		Power	Analog power 3.3V
1	AGND		Ground	Analog ground
2	DVDA		Analog Input	AC coupled input path A
3	DVDB		Analog Input	AC coupled input path B
4	DVDC		Analog Input	AC coupled input path C
5	DVDD		Analog Input	AC coupled input path D
6	DVDRFIP		Analog Input	AC coupled DVD RF signal input RFIP
7	DVDRFIN		Analog Input	AC coupled DVD RF signal input RFIN
8	MA		Analog Input	DC coupled main-beam RF signal input A
9	MB		Analog Input	DC coupled main-beam RF signal input B
10	MC		Analog Input	DC coupled main-beam RF signal input C
11	MD		Analog Input	DC coupled main-beam RF signal input D
12	SA		Analog Input	DC coupled sub-beam RF signal input A
13	SB		Analog Input	DC coupled sub-beam RF signal input B
14	SC		Analog Input	DC coupled sub-beam RF signal input C
15	SD		Analog Input	DC coupled sub-beam RF signal input D
16	CDFON		Analog Input	CD focusing error negative input
17	CDFOP		Analog Input	CD focusing error positive input
18	TNI		Analog Input	3 beam satellite PD signal negative input
19	TPI		Analog Input	3 beam satellite PD signal positive input

■ ALPC (4)

No.	Name	Alt.	I/O	Function
20	MDI1		Analog Input	Laser power monitor input
21	MDI2		Analog Input	Laser power monitor input
22	LDO2		Analog Output	Laser driver output
23	LDO1		Analog Output	Laser driver output

■ ADC for SACD (5)

No.	Name	Alt.	I/O	Function
239	ADCVDD3		Power	Analog 3.3V Power for ADC
240	S_VCM		Analog Inout	SACD- Common mode reference
241	ADCVSS		Ground	Analog ground for ADC
242	S_VREFP		Analog Inout	SACD- TOP Reference
243	S_VREFN		Analog Inout	SACD- Bottom Reference

■ Reference Voltage (3)

No.	Name	Alt.	I/O	Function
28	V2REFO		Analog output	Reference voltage 2.8V
29	V20		Analog output	Reference voltage 2.0V
30	VREFO		Analog output	Reference voltage 1.4V

■ **Analog Monitor Output (7)**

No.	Name	Alt.	I/O	Function
24	SVDD3		Power	Analog power 3.3V
25	CSO	RFOP	Analog output	NC
26	RFLVL	RFON	Analog output	NC
27	SGND		Ground	Analog ground
31	FEO		Analog output	Focus error monitor output
32	TEO		Analog output	Tracking error monitor output
33	TEZISLV		Analog output	TE Slicing Level

■ **Analog Servo Interface (6)**

No.	Name	Alt.	I/O	Function
244	RFVDD3		Power	Analog Power
245	RFRPDC		Analog output	RF ripple detect output
246	RFRPAC		Analog Input	RF ripple detect input(through AC-coupling)
247	HRFZC		Analog Input	High frequency RF ripple zero crossing
248	CRTPLP		Analog output	Defect level filter capacitor connecting
249	RFGND		Ground	Analog Ground

■ **RF Data PLL Interface (9)**

No.	Name	Alt.	I/O	Function
230	JITFO		Analog output	The output terminal of RF jitter meter.
231	JITFN		Analog Input	The input terminal of RF jitter meter.
232	PLLVSS		Ground	Ground pin for data PLL and related analog circuitry.
233	IDACEXLP		Analog output	Data PLL DAC Low-pass filter
234	PLLVDD3		Power	Power pin for data PLL and related analog circuitry.
235	LPFON		Analog Output	The negative output of loop filter amplifier
236	LPFIP		Analog Input	The positive input terminal of loop filter amplifier.
237	LPFIN		Analog Input	The negative input terminal of loop filter amplifier.
238	LPFOP		Analog Output	The positive output of loop filter amplifier

■ **Motor and Actuator Driver Interface (10)**

No.	Name	Alt.	I/O	Function
34	OP_OUT		Analog output	NC
35	OP_INN		Analog input	NC
36	OP_INP		Analog input	NC
37	DMO		Analog Output	Spindle motor control output. PWM output.
38	FMO		Analog Output	Sled motor control output. PWM output.
39	TROPENPWM		Analog Output	Tray open / close control output.
40	PWMOUT1	V_ADIN9	Analog Output	Sled motor control output
41	TRO		Analog Output	Tracking servo output. PDM output of tracking servo compensator.
42	FOO		Analog Output	Focus servo output. PDM output of focus servo compensator
47	FG (Digital pin)	V_ADIN8	LVTTL 3.3V Input, Schmitt Input, pull-up , with analog input path for V_ADIN8	Motor Hall sensor input

■ General Power / Ground (32)

No.	Name	Alt.	I/O	Function
52, 97, 122, 152, 173, 221	DVDD18		Power	1.8V power pin for internal digital circuitry
85, 116, 144, 163, 216	DVSS		Ground	1.8V Ground pin for internal digital circuitry
73, 80, 108, 127, 141, 155, 167, 182, 212	DVDD3		Power	3.3V power pin for internal digital circuitry
62, 94, 119, 134, 148, 161, 175, 223	DVSS		Ground	3.3V Ground pin for internal digital circuitry
204	DVDD3		Power	3.3V power pin Video DAC digital circuitry only
63	APLLCAP		Analog Inout	APLL External Capacitance connection
64	APLLVSS		Ground	Ground pin for audio clock circuitry
65	APLLVDD3		Power	3.3V Power pin for audio clock circuitry

■ Micro Controller and Flash Interface (48)

No.	Name	Alt.	I/O	Function
59	HIGHA0		Inout, 2-16MA, SR, PU	Flash address 8
75	HIGHA1		Inout, 2-16MA, SR, PU	Flash address 9
74	HIGHA2		Inout, 2-16MA, SR, PU	Flash address 10
72	HIGHA3		Inout, 2-16MA, SR, PU	Flash address 11
71	HIGHA4		Inout, 2-16MA, SR, PU	Flash address 12
70	HIGHA5		Inout, 2-16MA, SR, PU	Flash address 13
69	HIGHA6		Inout, 2-16MA, SR, PU	Flash address 14
68	HIGHA7		Inout, 2-16MA, SR, PU	Flash address 15
91	AD7		Inout, 2-16MA, SR	Flash data 7
88	AD6		Inout, 2-16MA, SR	Flash data 6
87	AD5		Inout, 2-16MA, SR	Flash data 5
86	AD4		Inout, 2-16MA, SR	Flash data 4
84	AD3		Inout, 2-16MA, SR	Flash data 3
83	AD2		Inout, 2-16MA, SR	Flash data 2
82	AD1		Inout, 2-16MA, SR	Flash data 1
81	AD0		Inout, 2-16MA, SR	Flash data 0
93	IOA0		Inout, 2-16MA, SR, PU	Flash address 0 / IO
78	IOA1		Inout, 2-16MA, SR, PU	Flash address 1 / IO
53	IOA2		Inout, 2-16MA, SR, PU	Flash address 2 / IO
54	IOA3		Inout, 2-16MA, SR, PU	Flash address 3 / IO
55	IOA4		Inout, 2-16MA, SR, PU	Flash address 4 / IO
56	IOA5		Inout, 2-16MA, SR, PU	Flash address 5 / IO
57	IOA6		Inout, 2-16MA, SR, PU	Flash address 6 / IO
58	IOA7		Inout, 2-16MA, SR, PU	Flash address 7 / IO
67	A16		Output, 2-16MA, SR	Flash address 16
92	A17		Output, 2-16MA, SR	Flash address 17
60	IOA18		Inout, 2-16MA, SR, SMT	Flash address 18 / IO
61	IOA19		Inout, 2-16MA, SR, SMT	Flash address 19 / IO
76	IOA20		Inout, 2-16MA, SR, SMT	Flash address 20 / IO
89	IOA21	V_ADIN0	Inout, 2-16MA, SR, SMT	IO

No.	Name	Alt.	I/O	Function
90	ALE		Inout, 2-16MA, SR, PU, SMT	NC
79	IOOE#		Inout, 2-16MA, SR, SMT	Flash output enable, active low / IO
66	IOWR#		Inout, 2-16MA, SR, SMT	Flash write enable, active low / IO
77	IOCS#		Inout, 2-16MA, SR, PU, SMT	Flash chip select, active low / IO
95	UWR#		Inout, 2-16MA, SR, PU, SMT	NC
96	URD#		Inout, 2-16MA, SR, PU, SMT	NC
98	UP1_2		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-2
99	UP1_3		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-3
100	UP1_4		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-4
101	UP1_5		Inout, 4MA, SR, PU, SMT	Microcontroller port 1-5
102	UP1_6	SCL	Inout, 4MA, SR, PU, SMT	Microcontroller port 1-6 I²C clock pin
103	UP1_7	SDA	Inout, 4MA, SR, PU, SMT	Microcontroller port 1-7 I²C data pin
104	UP3_0	RXD	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-0 8032 RS232 RXD
105	UP3_1	TXD	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-1 8032 RS232 TXD
106	UP3_4	RXD SCL	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-4 Hardwired RD232 RXD I²C clock pin
107	UP3_5	TXD SDA	Inout, 4MA, SR, PU, SMT	Microcontroller port 3-5 Hardwired RD232 TXD I²C data pin
111	IR		Input, SMT	IR control signal input
112	INT0#		Inout, 2-16MA, SR, PU, SMT	Microcontroller external interrupt 0, active low

■ Audio Interface (14)

No.	Name	Alt.	I/O	Function
208	SPMCLK	SCLK0	Inout	GPIO
209	SPDATA	SDIN0	Inout	GPIO
210	SPLRCK	SDO0	Inout	GPIO
211	SPBCK	SDCS0 ASDATA5	Inout	GPIO
213	ALRCK		Inout 4MA, PD, SMT	Audio left/right channel clock Trap value in power-on reset: 1 : use external 373 0: use internal 373
214	ABCK	Fs64	Output 4MA	Audio bit clock Phase de-modulation
215	ACLK		Inout, 4MA	Audio DAC master clock
217	ASDATA0		Inout, 4MA, PD SMT	Audio serial data 0 (Front-Left/Front-Right) DSD data left channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation
218	ASDATA1		Inout, 4MA, PD SMT	NC
219	ASDATA2		Inout, 4MA, PD SMT	GPIO
220	ASDATA3		Inout, 4MA, PD SMT	Audio serial data 3 (Center-back/ Center-left-back/Center-right-back, in 6.1 or 7.1 mode) DSD data right channel Trap value in power-on reset : 1 : manufactory test mode 0 : normal operation While only 2 channels output: GPIO
222	ASDATA4	INT1#	Inout, 4MA, PD SMT	NC
224	MC_DATA	INT2#	Inout	NC
225	SPDIF		Output, 2-16MA, SR : ON/OFF	SPDIF output

■ MISC (8)

No.	Name	Alt.	I/O	Function
110	PRST#		Input PU, SMT	Power on reset input, active low
109	ICE		Input PD, SMT	Microcontroller ICE mode enable
228	XTALO		Output	27M crystal out
229	XTALI		Input	27M crystal in

■ **DRAM Interface (63)(sorted by position)**

No.	Name	Alt.	I/O	Function
188	RD16	LLC_CLK SMPTE_C[0]	Inout Pull-Down	DRAM data 16 While using 16-bits wide DRAM: Line Locked Clock input/output Digital Video output C bit 0 GPIO
187	RD17	YUVIN0 SMPTE_C[1]	Inout Pull-Down	DRAM data 17 While using 16-bits wide DRAM: Video input data 0 Digital Video output C bit 1 GPIO
186	RD18	YUVIN1 SMPTE_C[2]	Inout Pull-Down	DRAM data 18 While using 16-bits wide DRAM: Video input data 1 Digital Video output C bit 2 GPIO
185	RD19	YUVIN2 SMPTE_C[3]	Inout Pull-Down	DRAM data 19 While using 16-bits wide DRAM: Video input data 2 Digital Video output C bit 3 GPIO
184	RD20	YUVIN3 SMPTE_C[4]	Inout Pull-Down	DRAM data 20 While using 16-bits wide DRAM: Video input data 3 Digital Video output C bit 4 GPIO
183	RD21	YUVIN4 SMPTE_C[5]	Inout Pull-Down	DRAM data 21 While using 16-bits wide DRAM: Video input data 4 Digital Video output C bit 5 GPIO
181	RD22	YUVIN5 SMPTE_C[6]	Inout Pull-Down	DRAM data 22 While using 16-bits wide DRAM: Video input data 5 Digital Video output C bit 6 GPIO
180	RD23	YUVIN6 SMPTE_C[7]	Inout Pull-Down	DRAM data 23 While using 16-bits wide DRAM: Video input data 6 Digital Video output C bit 7 GPIO
179	DQM2	YUVIN7	Inout Pull-Up	Data Mask 2 While using 16-bits wide DRAM: Video input data 7 GPIO
178	DQM3	INT6# SMPTE_CLK USB_CLK	Inout Pull-Up	Data Mask 3 While using 16-bits wide DRAM: Microcontroller external interrupt 6 Digital Video output Clock USB port CLK input (48MHz) part II GPIO
177	RD24	SDIN1 MS_BS SMPTE_Y[0]	Inout Non-pull	DRAM data 24 While using 16-bits wide DRAM: Serial interface port 1 data-in MS Card BS pin part II Digital Video output Y bit 0 GPIO
176	RD25	SDO1 MS_SDIO SMPTE_Y[1]	Inout Non-pull	DRAM data 25 While using 16-bits wide DRAM: Serial interface port 1 data-out MS Card SDIO pin part II Digital Video output Y bit 1 GPIO

No.	Name	Alt.	I/O	Function
174	RD26	SDCS1 MSCLK SMPTE_Y[2]	Inout Non-pull	DRAM data 26 While using 16-bits wide DRAM: Serial interface port 1 chip select Memory Stick Clock part II Digital Video output Y bit 2 GPIO
172	RD27	SCLK2 SDCLK SMPTE_Y[3]	Inout Non-pull	DRAM data 27 While using 16-bits wide DRAM: Serial interface port 2 clock pin Security Disk Clock part II Digital Video output Y bit 3 GPIO
171	RD28	SDIN2 SD_CMD SMPTE_Y[4]	Inout Non-pull	DRAM data 28 While using 16-bits wide DRAM: Serial interface port 2 data-in SD Card CMD pin part II Digital Video output Y bit 4 GPIO
170	RD29	SDO2 SD_DAT SMPTE_Y[5]	Inout Non-pull	DRAM data 29 While using 16-bits wide DRAM: Serial interface port 2 data-out SD Card Data pin part II Digital Video output Y bit 5 GPIO
169	RD30	SDCS2 SMPTE_Y[6]	Inout Pull-Up	DRAM data 30 While using 16-bits wide DRAM: Serial interface port 2 chip select Digital Video output Y bit 6 GPIO
168	RD31	INT5# ASDATA5 SMPTE_Y[7]	Inout Pull-Up	DRAM data 31 While using 16-bits wide DRAM: Microcontroller external interrupt 5 Audio serial data 5 part III : DSD data sub-woofer channel or Microphone output Digital Video output Y bit 7 GPIO
166	RA4		Inout	DRAM address 4
165	RA5		Inout	DRAM address 5
164	RA6		Inout	DRAM address 6
162	RA7		Inout	DRAM address 7
160	RA8		Inout	DRAM address 8
159	RA9		Inout	DRAM address 9
158	RA11	GPIO	Inout Pull-Down	DRAM address bit 11 While using DRAM size <=4MB: GPIO
157	CKE		output	DRAM clock enable
156	RCLK		Inout	DRAM clock
154	RCLKB	USB_CLK	Inout	DRAM clock invert While not using DDR: I) USB port CLK input (48MHz) part I
153	RVREF	V_ADIN3	Analog Inout	Reference voltage for DDR DRAM While not using DDR : Version AD input port 3
151	RA3		Inout	DRAM address 3
150	RA2		Inout	DRAM address 2
149	RA1		Inout	DRAM address 1
147	RA0		Inout	DRAM address 0
146	RA10		Inout	DRAM address 10
145	BA1		Inout	DRAM bank address 1
143	BA0		Inout	DRAM bank address 0

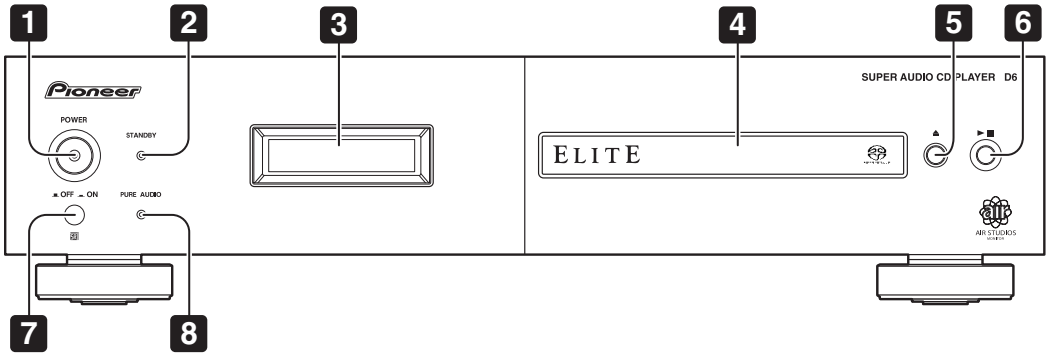
No.	Name	Alt.	I/O	Function
142	RCS#		output	DRAM chip select, active low
140	RAS#		output	DRAM row address strobe, active low
139	CAS#		output	DRAM column address strobe, active low
138	RWE#		output	DRAM Write enable, active low
137	DQM1		Inout	Data mask 1
136	DQS1	INT7# MS_BS	Inout	Data strobe 1 for DDR DRAM While not using DDR: Microcontroller external interrupt 7 MS Card BS pin part I GPIO
135	RD8		Inout	DRAM data 8
133	RD9		Inout	DRAM data 9
132	RD10		Inout	DRAM data 10
131	RD11		Inout	DRAM data 11
130	RD12		Inout	DRAM data 12
129	RD13		Inout	DRAM data 13
128	RD14		Inout	DRAM data 14
126	RD15		Inout	DRAM data 15
125	RD0		Inout	DRAM data 0
124	RD1		Inout	DRAM data 1
123	RD2		Inout	DRAM data 2
121	RD3		Inout	DRAM data 3
120	RD4		Inout	DRAM data 4
118	RD5		Inout	DRAM data 5
117	RD6		Inout	DRAM data 6
115	RD7		Inout	DRAM data 7
114	DQS0	SCLK1 MS_SDIO	Inout	Data strobe 0 for DDR DRAM While not using DDR: Serial interface port 1 clock pin MS Card SDIO pin part I GPIO
113	DQM0		Inout	Data mask 0

■ Other Interface (4)

No.	Name	Alt.	I/O	Function
48	TDI	SDO3 V_ADIN4 SD_DAT	Inout	GPIO
49	TMS	SDIN3 V_ADIN5 SD_CMD	Inout	GPIO
50	TCK	SCLK3 V_ADIN6 SDCLK	Inout	GPIO
51	TDO	SDCS3 V_ADIN7 MSCLK	Inout	GPIO

8. PANEL FACILITIES

Front panel



1 POWER ■ OFF ▂ ON

2 STANDBY indicator

3 Display

4 Disc tray

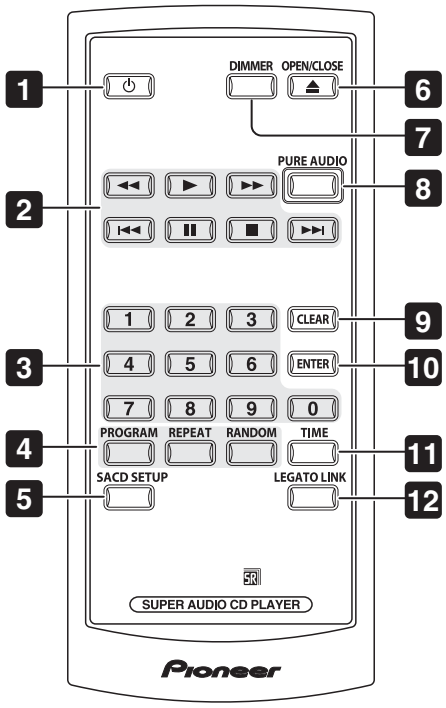
5 ⏏

6 ►/■

7 Remote sensor

8 PURE AUDIO indicator

Remote control



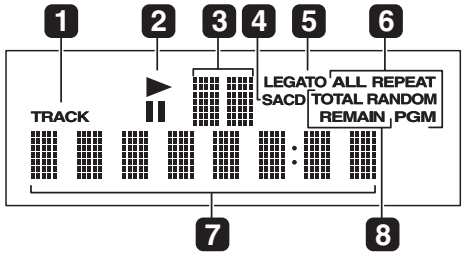
1 ⏻
2 **Playback controls**
3 **Number buttons**
4 **PROGRAM**
REPEAT
RANDOM
5 **SACD SETUP**
6 **⏏OPEN/CLOSE**
7 **DIMMER**
8 **PURE AUDIO**
9 **CLEAR**
10 **ENTER**
11 **TIME**
12 **LEGATO LINK**

Using the remote control

Keep in mind the following when using the remote control:

- Make sure that there are no obstacles between the remote and the remote sensor on the unit.
- The remote has a range of about 23 ft. at an angle of about 30∫ from the remote sensor.
- Remote operation may become unreliable if strong sunlight or fluorescent light is shining on the unitís remote sensor.
- Remote controllers for different devices can interfere with each other. Avoid using remotes for other equipment located close to this unit.
- Replace the batteries when you notice a fall off in the operating range of the remote.

Display



1 **TRACK** - Lights when the track number is indicated.
2 **►/II** - Light during playback / when paused.
3 **Scan display** - Shows the scan speed.
4 **SACD** - Lights during SACD playback.
5 **LEGATO** - Lights when Legato Link Pro is switched on.
6 **(ALL) REPEAT / RANDOM / PGM** - Light to indicate the playback mode.
7 **Character display**
8 **TOTAL / REMAIN** - Indicate the disc/track information currently displayed.

■ Jigs list

Name	Jig No.	Remarks
Service Remote Control Unit	GGF1381	adjustment, diagnosis
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
CD Test Disc	STD-905	Check of CD
Cable for service (5P)	GGD1425	Diagnosis of DVDM ASSY

■ Lubricants and Glues list

Name	Lubricants and Glues No.	Remarks
Lubricating Oil	GYA1001	refer to "2.4 05 LOADER ASSY"
Daifree	GEM1036	refer to "2.4 05 LOADER ASSY"
Silicone Adhesive	GEM1037	refer to "2.5 TRAVERSE MECHANISM ASSY-S"
Screw tight	GYL1001	refer to "6.5 MECHANISM ADJUSTMENT"

■ CLEANING

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup leneses	Cleaning liquid : GEM1004 Cleaning paper : GED-008